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ABSTRACT

A major study of mathematics and literacy instruction in schools that serve children of poverty is currently being conducted to determine more effective educational practices. The following principal questions are addressed: (1) what new approaches are being attempted in schools serving children of poverty; (2) which of these approaches hold promise; and (3) what combination of factors supports the introduction of promising instructional approaches. This interim report provides preliminary answers by describing current practices in first-, third-, and fifth-grade classrooms in 15 elementary schools in 3 urban, 1 suburban, and 2 rural districts that serve large numbers of children from low-income families. Descriptive results are given for the first 2 years of data collection; final analysis of outcomes will be issued in fall 1991. The following major findings are presented: (1) many teachers are engaged in modest departures from conventional assumptions about instruction in reading, mathematics, and writing; (2) a small number of teachers has made, or is attempting, more fundamental shifts in practice; and (3) state and district requirements and support systems at the school and district levels appear to play critical roles in enabling or inhibiting teachers' adoption of instructional alternatives. The preliminary findings indicate goals that can be achieved by teachers in schools perceived to be doing an average to good job of educating low-income children. Statistical data are presented in 23 tables. A list of 16 references, methodological notes, and 2 data-gathering instruments are appended. (SLD)

Study of Academic Instruction for Disadvantaged Students

WHAT IS TAUGHT, AND HOW, TO THE CHILDREN OF POVERTY

Interim Report from a Two-Year Investigation

March 1991

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Interim Report from a Two-Year Investigation

March 1991

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EXECUTIVE SUMMARY

Recent research and a growing body of evidence from demonstration programs suggests that a more academically challenging learning experience can be offered the students at greatest risk of academic failure--those from low-income backgrounds, who disproportionately represent ethnic and linguistic minorities. In the typical elementary school, however, these students encounter instruction that is often repetitive, uninspiring, and limited to the "basics."

Current practice reflects, in part, a widely accepted "conventional wisdom" about the best ways to teach in such settings.* These approaches emphasize curricula that proceed from the "basics" to advanced skills, instruction that is tightly controlled by the teacher, and ability grouping that often becomes permanent tracks at an early age. While these approaches may improve children's grasp of basic skills, they appear to shortchange learning of more advanced skills in reasoning, comprehension, and composition.

A major federal study of mathematics and literacy instruction in schools that serve the children of poverty is currently under way in search of more effective practice. The study is addressing three questions:

(1) What departures from conventional wisdom are being tried in schools serving the children of poverty?

(2) Which of these approaches show promise, either in their own right or in combination with more traditional approaches, for boosting students' mastery of advanced and basic skills?

(3) What combination of factors in the school, district, and state supports the introduction of promising instructional approaches?

The Interim Report

This report, the second to emerge from the study, provides preliminary answers to these questions, by describing current practices in first, third, and fifth grade classrooms in fifteen elementary schools that serve large numbers of children from low-income families. The interim report presents descriptive results from the first of two years of data collection; it does not include an analysis of outcomes. The third and final report (to be completed in the fall of 1991) will provide a more complete analysis of all study data sources, including outcomes of instruction.

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* Conventional and alternative approaches are described in the first of the Academic Instruction Study reports, Better Schooling for the Children of Poverty: Alternatives to Conventional Wisdom.

Themes from the First Year Findings

Major themes from the first year of investigation are as follows:

- **Many teachers in the sample schools are engaged in modest, incremental departures from conventional assumptions about mathematics, reading, and writing instruction.**

- **A small number have made, or are attempting, more fundamental shifts in practice.**

- **State and district requirements and support systems at the school and district level appear to play critical roles in enabling or inhibiting teachers' adoption of instructional alternatives.**

These themes emerge from analyses of instructional practices in the regular classroom, the role of supplemental instruction, and influences on the classroom practice.

Instructional Practices in the Regular Classroom

The first year of the study focused on identifying the range of approaches to mathematics, reading, and writing instruction in the regular classroom, with special attention to those features of instruction most likely to influence the acquisition of skills in mathematical reasoning, reading comprehension, and written composition. In addition, the study focused on aspects of instructional strategy and management that apply more generically to all subject areas.

Classroom Management and the Academic Learning Environment

Cutting across all subject areas are basic patterns of classroom management deriving from a variety of sources, such as the characteristics of the children themselves, the teachers' preferred style of interaction with them, and the teachers' ability to establish and maintain their conception of classroom order. The prevailing management pattern does not, by itself, determine academic outcomes, but it has much to do with the academic learning environment in the classroom. Four distinct environments are found in the study sample:

- Dysfunctional environments. Although generally excluded in the sampling process, some classrooms are preoccupied with unresolved problems of order; little academic work takes place in such settings.

- Adequate environments. In these classrooms, the problem of order is partially resolved and academic work is taking place, but the struggle between teacher and students over control continues.

- Orderly restrictive environments. Here, the great majority of students' time and energy is devoted to academic work, with little or no overt challenge to established classroom order. However, order is achieved through tight control that limits the range of instructional approaches and academic work in which students are able to engage.

- Orderly enabling environments. Students spend nearly all their time doing academic work with minimal disruption; teachers establish this kind of environment without restrictive controls and in a fashion that enables a wide range of activities and instructional approaches to be undertaken.

The full implications of these environments for student learning have yet to be demonstrated (it is possible, for example, that some students perform better in orderly, restrictive environments than in orderly, enabling environments).

A Dysfunctional Learning Environment

The students of various racial backgrounds in this fifth-grade classroom appear to like the teacher, but there is a constant tug-of-war between the teacher and students over discipline. The teacher is quite stern with the students, yet she often allows them to socialize: They take advantage of every opportunity to interact with each other--whispering, calling out, passing notes, moving around. In cyclical fashion, the noise level slowly rises beyond what the teacher will tolerate. She then angrily warns the class to quiet down and eventually hands out individual punishments or makes everyone "write lines"--that is, fill several sheets of paper with a disciplinary sentence or the school's mission statement. Things quiet down for a while, and the cycle begins again. Although they often seem eager to engage in learning activities, the students generally succeed in avoiding academic tasks entirely, especially when it involves seatwork.

An Orderly Enabling Learning Environment

In a word, this teacher's first-grade class in a rural area "hums." It is a comfortable place where the children, half Hispanic and half Anglo, enjoy being there and doing schoolwork; the business of learning is central to everything that is done in the room. Children treat each other and the teacher with respect, as a result of her careful lessons in how to listen to each other, to offer ideas verbally to the class, and to respect what others say. The teacher's management style is calm and quiet. She is remarkably effective at maintaining order despite the fact that the classroom is one of four clustered together in a semi-open pod arrangement. She uses a combination of quiet reminders and individual praise for So-and-So, who is sitting nicely now. The result is the students do what she asks the first time she asks, with rare exceptions (which are quickly brought into line), and attention is not drawn to management issues very often. The children devote nearly all of their energy to academic tasks and other aspects of the school's curriculum.

Although in one sense independent of what is taught in the three subject areas, the management pattern associated with each type of environment represents decisions (conscious or otherwise) about the kind of mathematics, reading, or writing in which students will be engaged.

Mathematics Instruction

On the whole, mathematics instruction in the sample classrooms conforms to trends that are prevalent across the country. Arithmetic computation is the overriding goal of instruction in many classrooms from first through fifth grades; instruction typically emphasizes teacher presentation followed by written seatwork. The curriculum is often defined by the textbook.

Nonetheless, classrooms do vary on dimensions that reflect two strategies for maximizing mathematical understanding and reasoning. The first strategy emphasizes conceptual understanding and skill building; the second strategy broadens the array of mathematical topics beyond arithmetic. Based on the presence or absence of these strategies, classroom instruction tends to exhibit one of the following four goal orientations:

- Focus on arithmetic with skill building as the primary goal.
- Focus on arithmetic with the goal of building conceptual understanding along with skills.
- Focus on multiple topics, with a "skills only" orientation.
- Focus on multiple topics with equal (sometimes greater) attention to conceptual understanding (see example below).

Mathematics in a Third-Grade Classroom

The teacher appears to be doing an excellent job of implementing the relatively new state framework for mathematics education in a diverse inner-city third-grade classroom. While she emphasizes arithmetic computation skills throughout the year, she also integrates instructional material relating to geometry, measurement, problem solving, logical reasoning, statistics and probability, and patterns and sequence. The teacher uses manipulatives to help teach concepts. Cooperative learning groups are often used in her class, and in fact about one-third of the class time is in some sense "student-directed," which is exceptionally rare. The teacher consistently makes connections between one mathematics concept and another, thereby helping to present mathematics as a unified discipline, not just a set of different skills.

Each successive goal orientation represents an increasing departure from conventional assumptions about mathematics teaching; classrooms in the fourth group come close to the goals of reformers in mathematics, e.g., as expressed in the National Council of Teachers of Mathematics' Curriculum and Evaluation Standards for School Mathematics.

Various features of mathematics instruction differ systematically depending on the goal orientation teachers adopt. Those teaching multiple mathematical topics, for example, tend to spend more time per day on mathematics than those who concentrate on arithmetic alone. In classrooms in which conceptual understanding is emphasized, students use manipulatives more often. Teachers who concentrate on arithmetic skills tend to rely more heavily on the textbook than teachers who pursue a more wide-ranging curriculum.

Reading Instruction

The variation in approaches to reading instruction across the sample classrooms is not as neatly categorized as in mathematics, and the differences across grades are more pronounced. Nonetheless, there are common patterns, both across and within grades. Basal readers form the core of reading material in most classrooms, especially in the lower grades; in the great majority of these cases the basals take the form of "literary" readers, which principally contain excerpts from children's literature. Nearly all teachers spend a substantial portion of their time on teaching discrete reading skills. Homogeneous grouping by ability is prevalent (though not universal), especially in first grade. Thus, few classrooms exhibit approaches to reading, or literacy as a whole, that reflect radical alternatives to established practice, such as those advocated by proponents of "whole language" teaching (although elements of whole language approaches influence many teachers' work).

Nonetheless, important differences in approach can be discerned. Parallel to their use of strategies aimed at mathematical reasoning, teachers make varying use of the following strategies aimed at maximizing reading for understanding:

- Maximizing the opportunities to read whole text, both orally and silently.
- Integrating reading and writing instruction.
- Focusing on comprehension and interpretation of what is read, especially through explicit teaching of strategies for comprehending text.
- Deemphasizing the teaching of discrete skills in isolation from text.
- Providing opportunities to discuss what is read and extend knowledge gained from reading.

These strategies are combined (or ignored) in a variety of ways that do not yield a simple typology, as in the case of mathematics. In promising cases, classrooms display several strategies at once (see inset example below).

Reading in a Fifth-Grade Classroom

In a multiracial fifth-grade classroom, the teacher has shifted from basal readers to a literature-based curriculum designed by her and a colleague. During reading instruction, she pushes her students not only to expand their vocabularies and knowledge of the world but also their ability to interpret what they read. For example, while reading two stories that center on the experiences of Black Americans during the Revolutionary War, the class is assigned to write about fairness in the story. Later, the students share the results of their efforts with each other. As the teacher guides the students in the presentation of their thoughts to peers, she teaches them how to compliment and support each other in a group setting. As the children read what they have written, the teacher finds something encouraging to say toeach before offering constructive criticism and suggestions for expansion or rewriting. This teacher finds that having students write about what they have read facilitates comprehension. In addition, she reads aloud to her class extensively and regularly and types and distributes song lyrics as a music-related activity.

Writing Instruction

As is the case nationwide, sample classrooms exhibit a wide range of approaches to writing instruction, from those in which virtually no writing takes place to those with extensive and varied opportunities for writing composed text. Instruction in at least some elements of the writing process is widespread. When they do compose actual text, students are most likely to engage in "personal" writing (typically in journals, which are found in most of the sample classrooms). A fair amount of imaginative and informative writing is also done; persuasive or analytic writing, however, is the exception rather than the rule. Language-mechanics skills, such as spelling, handwriting, punctuation, and grammar, are widely taught, although teachers differ in the manner in which they teach these skills.

The amount of composed text writing provides a clue to other features of writing instruction, in particular a series of strategies that teachers adopt to maximize meaningful written communication, many of which parallel those described above for reading. Classrooms with large amounts of composed writing also tend to exhibit most of the following strategies (see inset example below):

- Integrating writing with other areas of the curriculum.
- Emphasizing meaningful communication as the goal of writing and simultaneously deemphasizing language-mechanics skills and correctness.
- Teaching the process of writing.
- Constructing a social context for writing that motivates students and encourages communication with others (e.g., by permitting peer interaction while writing and allowing students more room to determine the content and form of their written expression).

Writing in a First-Grade Classroom

A visit to this inner-city first-grade classroom at any time during the year reveals the importance given to written text. The walls of the classroom are filled with word lists, poems, the class daily newspaper, and stories dictated to the teacher early in the year and later written by the students themselves. Each morning, the the students dictate to the teacher five or six sentences that comprise that day's newspaper, which is posted throughout the day and taken home by a different student each day. In the early weeks of the school year, the students draw story pictures and label these pictures, using words from the lists displayed around the room. Later in the school year, the students write three- or four-sentence stories. Approximately 90 minutes of each morning is devoted to students dictating different kinds of text to the teacher and to reading these lists and stories. There is additional time for journal writing on a daily basis.

Supplemental Instructional Programs

Federal, state, and local programs or mandates support supplemental instructional services of various kinds in the schools under study--for example, the federal compensatory education program (Chapter 1), special education services of various kinds, and bilingual or English-as-a-Second-Language (ESL) programs for students with limited English proficiency. These programs play a potentially important role in the mathematics and literacy instruction available to students in the sample classrooms, especially for those who are less proficient in academic work. During the first year of the investigation, the study concentrated on identifying what supplemental staff bring to academic instruction and the instructional models employed by these services. The final report will address questions about what is actually taught to whom through such services.

Supplemental program staff bring both advantages and problems to their schools. On the one hand, they offer an "extra pair of hands" to teachers who face many demands, and in many cases they possess specialized skills in other subject areas. In addition, supplemental staff often increase the ethnic and cultural diversity of the instructional staff, which is especially appropriate to the often multicultural student population in the schools under study. At the same time supplemental staff bring complexity and a certain measure of unpredictability to the classroom teacher's already complicated life.

In the sample classrooms, supplemental program staff assist with instruction in three primary ways:

- Provide help with seatwork in the regular classroom.
- Enable the teacher to create special grouping arrangements.
- Offer specialized remedial instruction, in or out of the regular classroom.

Less frequently, supplemental instructional services take several other forms: As a source of advanced work for academically talented students; as a way of extending the school day or year (e.g., through after-school tutoring or extra instruction during vacation times); and as a vehicle for computer-based instruction (e.g., in those schools with computer labs).

Influences on Academic Instruction in the Classroom

Although there are innumerable subtle forces that affect the instruction teachers offer their students in the schools under study, several broad categories of influence appear to offer a partial explanation for the patterns of academic instruction across all subject areas.

First, the nature of the students in the classroom makes it more likely for certain management patterns or forms of instruction to appear. However, the expected pattern appears less often than is typically assumed--that is, classrooms with higher pupil-teacher ratios, greater diversity, more low-income children, and greater student mobility are not necessarily the ones with unresolved management problems or less challenging instruction. In other words, teachers respond to the difficult challenges such classrooms pose in different ways, and not necessarily with a restricted range of curricula and learning opportunities.

Second, teachers' preparation, beliefs, and level of commitment are a major force in shaping what they do in the classroom. Teachers with more extensive subject-area preparation and professional development are more likely to experiment with alternatives to conventional skill-oriented instruction. Teachers' conceptions of the subject area and beliefs about how to teach it exert a similar influence on the kind of learning experience they offer students. In addition, teachers' personal commitment to their teaching leaves an unmistakable stamp on the degree to which they depart from traditional approaches to instruction.

Third, what teachers do in the classroom reflects factors in the school and district environment, among them:

- District and school curricular policies and how they are set, in particular, the extent to which the district prescribes what should be taught and how.
- Textbook choices, most clearly seen in the adoption of new language arts textbooks that embody different assumptions about literacy instruction.
- Testing and accountability pressures.
- District and school support--for example, through professional development opportunities, instructional guidance by the principal or other specialists, and the availability of appropriate resources.
- State (and sometimes district) frameworks or mandates that urge or require teachers to adopt (or refrain from) certain approaches to mathematics and literacy instruction.

These forces can act either as stimuli or constraints on what teachers do. Sorting out in greater detail the nature and extent of their influence on classroom practice is one of the tasks for the second year of the study.

What Has Been Learned and What Lies Ahead

Findings from the study's first year show a range of possibilities not widely assumed to be workable in classrooms serving the children of poverty. In particular, the patterns identified indicate numerous ways that instruction in such settings can focus more centrally on mathematical reasoning, reading comprehension, and written composition, even under the most trying circumstances. In addition, study findings point to key conditions and actions that encourage (or discourage) attempts to redirect instruction along these lines.

It is important to remember that the findings are not a statement of what is typical in schools serving the children of poverty, nor do they represent the results of a planned demonstration or test of cutting-edge practices. Rather, they indicate what can be achieved by teachers in schools perceived to be doing an average to good job of educating low-income children.

There is much that remains for the second year of the investigation and for further analysis of all the data sets that have been gathered, which will be presented in the second year report (to be completed in the fall of 1991).

- For one thing, the relationship between patterns of instruction and academic learning outcomes has yet to be examined: Which approaches (or combinations thereof) produce the best results, in terms of both conventional and alternative measures of achievement?

- The investigation will also explore the implications of instruction for different segments of the student population: How well does instruction work for high versus low achievers, for participants in supplemental programs versus others, for majority versus minority students? What kinds of instructional practices work best with different kinds of children in these settings?

- In this regard, there is much more to be learned about supplemental instruction, in particular, what it teaches and its connections to what is taught in regular classrooms.

- Finally, the study will investigate further the nature of teachers' response to new visions of mathematics and literacy instruction and the manner in which they can best be supported in moving towards these instructional goals.

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This interim report reflects the hard work of a large study team, the willing collaboration of teachers too numerous to name, and the advice of various experts in the field. In particular, we wish to acknowledge other members of the study's field staff not among this report's authors who were both data collectors and analysts during the study's first year: Rebecca Benjamin, Norma Francisco, Susan King, Ellen McIntyre, Laverne Middleton, Christine Padilla, Christene Petry, Katherine Ramage, Ellen Renneker, Debra Shaver, Deborah Swanson-Owens, and Choya Wilson.

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Michael S. Knapp
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INTRODUCTION: THE STUDY TASK AND INTERIM REPORT

Schools that serve large numbers of children from poor families face one of the most difficult tasks in education. Over the years, the teachers and administrators who staff these schools have learned to cope with high mobility among children, limited resources, inadequate facilities, and concentrations of children with diverse and hard-to-meet learning needs. Perhaps most difficult of all, these educators see children walk in the door each day who are not particularly well versed in the art of "doing school." Most teachers try hard to make the best of the challenge before them; many wonder why it seems difficult to make headway--that is, engage and maintain children's attention to learning tasks, communicate what often appears to be common sense, and show demonstrable achievement gains on conventional measures of learning. In doing so, these teachers often settle on a curriculum that aims at the most "basic" elements of the content to be learned, on the assumption that no more can be managed, and that even mastery of the basics is an important accomplishment.

The children who attend such schools face an equally difficult task. From their point of view, it is not always obvious why they should be in school or what they have to gain from being there or from going along with what schools ask of them. For one thing, the culture and language of school is unfamiliar, even if the children have grown up speaking English, and for a growing percentage of poor children it is literally a foreign language. To complicate matters, what teachers expect of them is not always clear nor compelling; indeed, it often appears to them that relatively little is expected of them.

There are many facets of the problem, some of which have little to do with the classroom. But we concentrate here on issues that are most clearly located within the classroom--those that have to do with the content of what is taught, the approach to teaching it, and the response of children to instruction. Our assumption is that given the right conditions for learning, children in such classrooms can make enormous strides in gaining academic skills, far beyond the performance they typically exhibit at present. Furthermore, we assume that, with the right kinds of resources and support, teachers and administrators can establish these conditions for learning. They can do so by the way they construe their client population, design curriculum, and carry it out both within and across classrooms.

This report is about what is taught, and how it is taught, in elementary schools that serve large numbers of children from poor families. In the report, we present what has been learned from the first year of a 2-year investigation that examines curriculum and instruction offered in reading, writing, and mathematics in these kinds of school settings. The report, and the study as a whole, are part of a search for content and instructional approaches that best impart to this segment of the student population both "the basics" in literacy and numeracy, and what are generally referred to as "advanced skills."

The points of departure for this investigation are twofold. First, there is general agreement that schools serving poor children do not do as good a job as they might in providing rich and challenging academic instruction for their students. Second, there are grounds for thinking that powerful alternatives are possible. Recent analysis and scholarship, alongside the efforts of many practitioners, point to other ways of construing curriculum and enacting it in classrooms that can engage students and convey to them a fuller base of knowledge and skills than is typically the case at present.

To give context for our review of findings, we present in this introduction the motivating issues, our approach to the study, and our way of framing the research problem.

Issues That Motivate the Study

The following capsule of a fifth-grade mathematics lesson midway through the year in one of our sample classrooms introduces the central concerns of the study:

- James' Mathematics Lesson. It is time for mathematics. James asks the children to switch from the dictionary skills worksheet that they have been working on to the mathematics homework. The students, a mixed group of Anglo and Hispanic children from a nearby housing project, fumble for their homework sheets. Some never find them; a few--primarily a handful of boys (mostly Hispanic) located at seats around the edge of the room--pay little attention to what is going on, but James appears not to notice (for the moment, the nonparticipants are quiet). The next 15 minutes are devoted to a review of the homework, which involved long division. James proceeds in rapid-fire fashion, asking for the correct answer and providing it if some member of the class fails to give it. The students correct their own sheets and then sing out how many they got right. The class shifts to a 15-minute presentation by James at the blackboard on the finer points of long division with a two-digit divisor (which was the subject of the homework). Many students fidget during the explanation; the nonparticipating children are beginning to be louder and more noticeable. "This class just doesn't seem to get it," he explains at the end of the class; his game plan appears to be to repeat the explanation "till they understand it." The class ends with a period of seatwork--more practice with long division problems. The class works at this task, but the contingent of nonparticipating boys does little. Once again, James pays little attention to them (he explains later that he has tried hard to involve them and they "just don't respond; they don't care about learning, so I don't spend much time with them"). A few minutes later they and their classmates are tumbling out the door to recess.

The scene is typical of many days in this classroom and of many other classrooms across the nation as well. To be sure, things are happening that distinguish it from the dysfunctional classrooms that are often found in schools serving poor children: in James' room, instruction is taking place; the class is under control, for the most part; children are being given homework, most are doing it, and to some extent they are being held to account for it. But some important elements are missing from their education. The students are being taught procedures without meaning and without a compelling reason to learn these procedures. What they are being taught lacks connection to their lives. Not surprisingly, their response to instruction lacks enthusiasm. As a class, they are not "getting it," even though by year's end they may manage a reasonable score on the district's standardized tests. What is more, a part of the class has, in effect, been written off.

There are already widely accepted answers about how to educate the kinds of students in James' classroom, and his approach to mathematics exemplifies many of them. These answers form an unstated but pervasive "conventional wisdom" about curriculum and instruction that we have described in detail elsewhere (see Knapp & Turnbull, 1990; Knapp & Shields, 1990). In brief, the key tenets of the conventional wisdom are these:

- View of "disadvantaged" learners: An emphasis on learners' deficits--that is, their presumed lack of information, intellectual facility, and readiness for schoolwork.
- Curriculum organization: A model of the curriculum in mathematics and literacy that emphasizes sequential mastery of discrete skills ordered from "the basics" to higher-order skills.
- Instructional approach: A high degree of teacher-directed instruction, in which the teacher presents material and supervises students closely, designed to maximize engaged learning time and the frequency of feedback to students.
- Classroom management: An approach to classroom management built on generic principles for maintaining classroom order, to be applied uniformly across content areas.
- Arrangement of instructional groups: Instructional arrangements that are grouped or tracked by students' ability, not only within class, but also through supplemental programs for children with the greatest educational need.

But there are alternatives to the conventional wisdom that may offer students more, and there are grounds for believing that the alternatives can work well in the variety of settings in which poor children are educated. These alternatives vary somewhat by content area, but four kinds of changes in thinking and practice are implied:

- Changing the Way the Student is Viewed. It is possible to shift emphasis from what the student lacks (e.g., print awareness, grasp of Standard English syntax, a supportive home environment, or whatever) to what the student brings to school (e.g., intuitive learning of various kinds, a set of experiences to which learning can relate, and so on). Teaching approaches that take this view of students need not ignore what learners do not know, but try to place it in context with what the child does know and can do.

- Changing What is Taught. Alternatives to conventional wisdom assert that a more challenging curriculum is both possible and more likely to engage children in academic learning. Such curricula typically emphasize meaning and understanding, engage learners in complex as well as simple tasks from early on (with appropriate supports or "scaffolding" from the teacher) and emphasize holistic activities such as reading or writing text more than discrete skills. Although approaches vary on this point, the alternatives do not typically eliminate discrete skill teaching, but rather seek to integrate it with the activities to which the skills relate.

- Changing How Teaching is Done. A variety of alternatives to teacher-directed, ability grouped instruction are attracting attention these days and among them several themes stand out. First, alternatives urge teachers to make more room for student-directed learning or, put another way, to balance teacher-directed instruction with activity that over time gives students greater responsibility for their own learning. Second, there are alternatives to conventional approaches to classroom management that seek to make management more flexible and more closely related to the actual academic tasks being done. Third, the differences in children's proficiencies can be handled in other ways than to group students homogeneously by ability, the most prevalent approach at present in both regular classrooms and supplemental instructional programs (other than ignoring student differences altogether).

- Changing the School and District Environment for Academic Instruction. Changes of the sort just described are likely to occur on a wide scale only if the right conditions are in place at the school and district (and even state) levels. Such conditions include curricular frameworks and guidelines that direct teachers to change their content; appropriate choices of textbooks and other resources that are implied by alternative views of what is to be taught; testing policies that support changes in instruction (e.g., by measuring the new things being taught); support systems such as staff development and teaming arrangements that provide teachers help and encouragement as they attempt to teach in different ways; an ethos in both district and school that places high value on academic learning; and a relationship between schools and community that encourages mutual understanding.

Making changes of this sort is widely recognized as a difficult task. There is still much to be learned about how to introduce the alternatives just alluded to in the wide variety of settings in which the children of poverty are taught. The process by which teachers make the transition from conventional practices to alternatives is also poorly understood. Our study set out to illuminate these issues, by intensively studying classrooms located in high-poverty elementary schools.

Study Approach

The study approach focuses on:

- Curriculum and Instruction, Within and Across Subject Areas. Selecting reading, writing, and mathematics as target areas of the curriculum, we have designed a study that maximizes what we can learn about content (what children are taught) and instructional approach (how children are taught).
- The Classroom Level. Using a broad definition of classroom that subsumes supplemental instruction arrangements, we are examining primarily classroom-level phenomena--how curriculum is set up for groups of children, what teachers do in the classroom, influences on student performance aggregated to the classroom level. Both data collection and analysis treat the classroom as the primary unit of study.
- Naturally Occurring Effective Practice. By contrast with studies that "plant" a promising practice or program in a set of classrooms and study its effects, we are investigating the range of practices in place in a set of schools that appear to be performing well, at least, as far as this can be judged by standardized testing measures. Our assumption is that across a large number of classrooms in such schools, important insights can be derived about "effective" practice by documenting what is being done, and contrasting what happens in one type of classroom versus another.

The study design combines quantitative and qualitative data sources, including test scores and other outcome measures, daily teacher logs, coded observational data, student and school background data, and detailed qualitative reports of curriculum and instruction in a selected subset of classrooms. The design enables us to examine all six grades in elementary school, through two waves of data collection, the first concentrating on grades 1, 3, and 5, and the second during the following school year, on grades 2, 4, and 6. Second-year classrooms are chosen to maximize the number of first-year children in them, thus enabling some forms of longitudinal analysis to be done.

The design combines traditions of research that are not normally put together, especially in a study conducted on such a large scale. The quantitative design draws on the "process-product" tradition, but is integrated with a heavily qualitative intensive design aimed at producing rich qualitative descriptions of instruction in action. Furthermore, the study examines three different content areas, and at the same time cross-subject phenomena. Part of our task is to explore the feasibility of such a design, in addition to its role as a source of new knowledge about the topics under investigation.

Classrooms have been chosen for study through a several-stage process that led to a sample of 15 schools in 6 districts located in 3 states (California, Ohio, and Maryland). The school and district settings differ considerably in the kinds of student populations served and the school and district environment for academic instruction. Three districts serve primarily inner-city populations, one primarily black children, another primarily black and Hispanic, and a third with a mixture of ethnic and racial groups. A fourth district lies in a suburban setting adjacent to a large city and shares many of the characteristics of an inner-city setting. The remaining two districts are located in rural or semirural settings, one serving a population of white children and the other a mixed white and Hispanic group.

Framing the Investigation

We built our investigation around certain key concepts that define settings and target population, the principal, units of analysis and time frame for study, and the focus of data collection. They serve to introduce the summary of findings in this report by delineating what in the complex world of classrooms and schools we have been paying attention to.

"Disadvantaged" Students--The study is, first of all, about the education of children who come from low-income families and who, in a statistical sense, are more likely to experience school failure than their more affluent counterparts. But in a broader sense, the study is about the education offered all children who attend schools serving large numbers of poor children, for it is in these schools that the conditions of learning tend not to encourage academic instruction of the sort alluded to earlier in this introduction. Children from low-income families and, indeed, all children attending such schools are often referred to as "disadvantaged": in a demonstrable way they face a substantial disadvantage in access to learning and ultimately to productive careers or fulfilling lives.

The boundary of our investigation encompasses many more than those children officially designated as "educationally disadvantaged" (or "educationally deprived") and therefore eligible for participation in remedial or compensatory programs such as the federal Chapter 1 program or its state or local counterparts. Large numbers of such children attend the schools we are studying--on average, 42% of the children in the sample classrooms are eligible for the Chapter 1 program--and we are especially interested in what schools have to offer them. But we are equally interested in the academic program as a whole available to the full student population in each school.

The Classroom as the Unit of Study--Within these schools we are concentrating on the classroom, which is the principal unit of data collection and analysis, especially for this interim report of study findings. In our conception, this unit encompasses both what takes place within the regular classroom walls and in supplemental programs serving students from the classroom group. Conceptually, we view all supplemental programs, whether they operate within the classroom or elsewhere, as extensions of the academic program offered to the students in the classroom. This is not to say that these programs are coordinated or integrated with what goes on in the regular classroom, but in principle they can be. Inescapably, they offer an additional (or substitute) academic experience to some or all of the students from the regular classroom group.

In schools that emphasize team teaching, subject area specialization, and cross-graded teaching arrangements, the "classroom" is not always a unitary group of students who remain together throughout the school day. Thus, for example, the homeroom group that gathers at the beginning of the day may well break into smaller groups that recombine in other teachers' rooms later in the day for instruction in one or more subjects. Or, if the homeroom group combines different grades, the classroom may in effect represent two smaller classes occupying the same space and be taught accordingly.

The Focus of Data Collection--Within the classroom, the study is concentrating on (1) the curriculum as enacted by the teacher, (2) the manner in which the teacher carries out this task, (3) the response of students to instruction, and (4) the academic learning that results. In data collection, we have paid special attention to the teacher and the nature of academic tasks set for students, because these are what school people have most control over.

The School Year as Time Frame--The time frame for data collection and analysis is the school year--that is, what is taught across the year and how it is taught. Thus, the story we have to tell has more to do with the "big picture " than the fine detail of relationships between a teacher and students at moments of time, although we use periodic "slices of time" to help us a build a picture of instruction over time. We build our picture of what is taught across the year from three sources: teachers' daily logs kept across the year, periodic interviews with the teachers, and three 2-week periods (fall, winter, and spring) during which observations and other forms of intensive data were collected.

The Scope of the Interim Report

This report presents what has been learned about classroom management, the content of curriculum, and approaches to instruction after 1 year of study. The chapters that follow answer the questions:

(1) How do the school and district settings differ as environments for academic instruction? (Chapter 1)

(2) How do teachers solve the problem of establishing classroom order? What implications do the teachers' management approaches have for the academic learning environment within the classroom? (Chapter 2)

(3) What is taught across grades and across the school year in mathematics, reading, and writing? (Chapters 3, 4, and 5, respectively, for each subject area)

(4) How do classrooms differ in their approach to teaching these three subject areas? (Chapters 3, 4, and 5)

(5) To what extent do content and teaching approaches move beyond current conventional wisdom emphasizing linear basic skills curricula? (Chapters 3, 4, 5)

(6) What do supplemental instruction arrangements bring to these classrooms and schools and what are the implications for mathematics and language arts instruction? (Chapter 6)

(7) What explains the differences among classrooms in what is taught and how? (Chapter 7)

We answer these questions with qualitative and quantitative data regarding classrooms in grades 1, 3, and 5. Our goals for this report are modest: to present a descriptive picture of academic instruction within and across grades that bracket the elementary school years. From that description, various issues have emerged that are being pursued in greater depth during the second year of field work and will be summarized in the final report.

The story we have to tell in this interim report is incomplete in five respects. First, although considerable outcome data were collected during the first year, analyses of outcomes do not appear here, but rather will be part of the final report of the study. At that point, it will be possible to consider not only the immediate learning gains from fall to spring, but also 12-month and 2-year outcome patterns (for all students who remain in sample schools during the second year). Thus, the interim report has relatively little to say to the question: How effective are the different instructional approaches in producing academic learning over the short and long term? Answering this question will be a major focus of the final report.

Second, the analyses presented here do not delve deeply into the way different groups within the classroom are taught and what they take away from instruction as a result. The set of issues surrounding how children from linguistically and culturally different backgrounds are served by schools is especially important--and difficult--to address in any investigation regarding the education of low-income students. As will be explained in Chapter 1, we have chosen schools that collectively include a diverse student body including various racial, ethnic, and linguistic minority groups, as well as children from mainstream backgrounds. We are studying various aspects of the instructional challenge presented by these groups--among them, the differentiation of instruction, the connections between children's backgrounds and what is taught, and the "personalization" of instruction. Analysis of these data will appear in the final report, drawing on both years of data collection.

Third, although we describe the variety of supplemental instruction arrangements related to sample classrooms, we do not examine in detail what is taught by these services nor how they alter the overall pattern of academic instruction for students in each room. That issue has been reserved primarily for second-year data collection and the final report.

Fourth, we pay less attention to the environment for academic instruction--in particular, the school environment, but also the district, community, and state--than will be the case during the study's second year. Although the study is primarily concerned with classroom-level phenomena, the environments surrounding the classroom have a great deal to do with what is taught and how. For the interim report, we only suggest the roles that these forces play in Chapter 7, which discusses explanations for the patterns of academic instruction we observed. A fuller treatment of these issues will appear in the final report.

Finally, the interim report concentrates on only three of the six elementary grades. By bracketing the range of grades in the first year of data collection, we are likely to have captured the major differences across grades in the sample schools. Nonetheless, other important differences may surface and questions of continuity across grades will be more easily addressed when data from all six grades have been collected. In addition, patterns that are not grade specific can be examined with a larger sample of classrooms, combining data from both years.

Throughout the interim report, we have noted issues that will be pursued in greater depth in the final report. In this sense, what we report here is not a set of conclusions, but rather a set of initial understandings that guide and provoke further investigation.

PART ONE:

THE ENVIRONMENT FOR ACADEMIC INSTRUCTION

The environment in which teachers instruct the children of poverty has distinguishing features that must be appreciated before we can focus on the teaching and learning of mathematics, reading, and writing. The environment for academic instruction arises in part from conditions outside the classroom over which teachers typically have little control--in particular, from the kind of school, district, and community in which they work. But in part, teachers create the environment in which they work and in which their students learn.

In this part of the report, we set the stage for examining academic instruction by describing the settings within which the teachers in our sample teach and the variety of academic learning environments within the classroom that result, in part, from their approaches to classroom management.

In introducing the districts and schools included in the study (in Chapter I), we accomplish several purposes. First, we explain the process and criteria employed in constructing the sample, and the range of variation among classrooms that were selected for study in the first year of our investigation. Second, we characterize the district and school settings, with capsule illustrations that convey the overall ethos of the settings. Our purpose is not to trace the links between classroom instruction and the larger environments in which classrooms reside: that matter will be taken up in subsequent chapters of the report, especially Chapter VII.

Inside the classroom door, we concentrate (in Chapter II) on the overall management pattern--how the teacher resolves basic problems of order within the room--and the environment for academic learning that results. At this point in the report, our analysis makes relatively little reference to the teaching of particular subject areas. Although classroom management is intimately entwined with the approach to teaching particular subjects, there is nonetheless an "ethos" that transcends the teaching of each subject and that remains more or less constant across the school day. This ethos is the joint result of many factors (not the least of which is the students themselves), but in large measure it reflects the management assumptions, style, and skill of the teacher in question.

Our purpose in Chapter II is to identify one of the foundation stones on which effective academic instruction rests, but not to pursue the topic of classroom management for its own sake. That has been done extensively by other researchers, and there is general agreement on what constitutes effective management and how to achieve it. Ultimately, we wish to trace in greater detail the implications of management styles for effective academic instruction of the student population on which we are concentrating, but that is a matter that will be taken up in the final report of the study.

I SCHOOLS AND DISTRICTS SERVING THE CHILDREN OF POVERTY

Schools and districts offer the first and most immediate environment for what goes on in classrooms. So, to understand what we have found out about academic instruction in classrooms, the reader must first appreciate the kinds of schools and districts to which the data refer. We describe in this chapter the range of schools and districts chosen for the investigation, and the manner in which they were chosen.

The Sample and How It Was Chosen

Schools and classrooms serving the children of poverty are a diverse lot. In studying the academic instruction offered these children, we selected schools and classrooms that represented a wide range of conditions. At the same time, our intention to look intensively at instruction across the year limited the number of schools we could include in the sample.

The resulting sample of 15 schools in six districts captures many of the characteristics of schools serving high concentrations of low-income children. However, while the 15 faced conditions and challenges that are common across the land, the schools are not by and large typical.

As a study of naturally occurring effective practice, it was not our intention to represent in a statistical sense what is typical of all schools serving large numbers of poor children; therefore, sites were not chosen randomly. Instead, we selected schools that, for the most part, were performing well on conventional standardized tests compared to other schools serving a similar student population. Several of the sample schools were "average" in this contrast; others performed quite high. We systematically excluded cases in which school test scores were relatively low (although no formal cut-off score was set, we did not consider schools in which the average performance fell below the 25th percentile on standardized tests of mathematics and reading ability). As shown in Table 1, there was a range in student test performance, both across and within schools.

Classrooms were chosen on the basis of the following criteria:

- Teacher's experience. Beginning teachers were excluded on the assumption that most would be working out the many issues that new teachers encounter and that would obscure what we could learn about curriculum and instruction.

- General classroom management ability. Wherever we could, we avoided classrooms that, by reputation, were experiencing serious management problems or were, in some other obvious way, dysfunctional.

- Teacher's (and principal's) willingness to include the classroom in the study. Because we were asking a lot of participating teachers, it was essential to include those who wanted to be part of the project. Most teachers we approached were happy to be part of the study. A few declined for varying reasons, and in two instances principals virtually dictated which teachers could be included.

- Variation in instructional approach. To the extent possible, we selected classrooms to maximize the range of approaches to curriculum and instruction, based on what we could learn from principals and other reputable sources at the beginning of the year.

Using these criteria, we ended up with a set of classrooms taught by teachers of varying philosophies and apparent success with children. Given the numerous constraints in the sampling process at the school level, not all selection criteria were satisfied equally well: for example, a few teachers were less-than-enthusiastic participants, several others managed their classrooms so poorly that chaos reigned much of the time, and several teachers were on the verge of quitting teaching altogether because of deep dissatisfaction with teaching as a career or their particular assignments. For obvious reasons, there was relatively little to learn about effective curriculum and instruction in such instances, except the absence of critical conditions for good practice. But these were exceptions. On the whole, the sample classrooms were taught by experienced, committed individuals who were able to establish a basic level of order in the classroom and to focus children's energies on academic goals most of the time.

Table I-1

PERFORMANCE LEVEL OF SAMPLE SCHOOLS
(Based on selected classrooms in grades 1, 3, and 5)

	CTBS Reading Comprehension Score, Fall Pretest,[a] Classroom Mean NCE	Range in Scores[b] Within the School	
		Highest Classroom	Lowest Classroom
District 1 (Urban)			
School 1	31	36	21
School 2	34	42	22
District 2 (Urban)			
School 1	44	61	27
School 2	38	39	38
School 3	37	47	24
District 3 (Urban)			
School 1	41	47	29
School 2	36	40	34
School 3	50	53	46
District 4 (Suburban)			
School 1	37	44	19
School 2	43	57	29
School 3	43	71	30
District 5 (Rural)			
School 1	49	59	45
School 2	47	63	30
District 6 (Rural)			
School 1	51	59	37
School 2	51	56	48

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[a] Average of the mean scores on the pretest for the five or six sample classrooms in each school.

[b] Lowest and highest among the sample classrooms within the school.

Taken together, the first-, third-, and fifth-grade classrooms in the sample reflect a level of academic performance at the beginning of the year that places them slightly below national averages, although higher than most schools with similar demographic characteristics. As shown in Table 2, fall reading and mathematics scores place these students in the 40-50 Normal Curve Equivalent (NCE) range. The table also suggests the overall demographic profile of the students in the sample, which indicates that collectively the children in sample classrooms are mostly from low-income families (approximately two-thirds) and minority backgrounds (approximately three-quarters). Not surprisingly, large numbers of these children are served by supplemental programs (nearly half) that address one or another aspect of educational disadvantagement.

The Six Districts

Schools and classrooms were selected for study within six districts located within three states. Each district provided a unique environment for academic instruction through the nature of the community served, curricular policies, configuration of resources, and other forms of support for schools, and characteristic relationship between central office and the schools. A capsule description of each district highlights the key differences and similarities among them, starting with the three urban districts:

- District 1 serves approximately 75,000 students in an industrial city with large concentrations of low-income black, Hispanic, and Asian immigrant children. Students attending many of the district's schools come from communities beset by problems of urban poverty, among them drug-related activities, violence, and gang activity. The district is undergoing a turbulent period in which top-level management has been in transition, finances have been in disarray, and there has been little clear direction for academic work. By default, schools have gained a certain measure of autonomy and, depending on the schools' leadership, can shape their own academic programs more than in districts that exert a tighter control over affairs.

Table I-2

CHARACTERISTICS OF SAMPLE CLASSROOMS

Classroom Characteristics	Average of Classroom Measures (n = 85)
Fall pretest scores (classroom mean NCE)	
CTBS Reading Comprehension	43 NCEs
CTBS Mathematics Computation	49
CTBS Mathematics Concepts and Applications	42
Level of economic disadvantagement: Average percent of students in the classroom on Free-and-Reduced Lunch Program	65%
Participation in supplemental programs: Average percent of students served by--	
The Chapter 1 program	42%
Other programs	12%
Average class size	23 students[a]
Racial/ethnic composition of the class: Percent in each group	
Black	39%
Hispanic	14
White	28
Asian	8
Other	1

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[a] This figure reflects the fact that some "classes" on which we concentrated were in fact a subset of a larger homeroom group, due to teaming, departmental, or cross-graded arrangements.

- District 2 serves a student population resembling that of District 1 in size and composition, although with higher proportions of Hispanic and Asian students. The poverty-related conditions that characterize this city's neighborhoods are less severe than those in District 1: crime statistics, for example, are lower here than in the first case. The district is also more centralized and, at the present time, more effectively managed, in the sense that there is continuity in leadership and reasonable stability in financial support. The district has moved aggressively to implement key features of statewide frameworks promoting alternative approaches to mathematics and language arts instruction.

- District 3 serves a diverse city with a substantial affluent population and an inner-city core that is predominantly composed of low-income black families, but with neighborhoods in which poor white families recently arrived from rural areas reside. Desegregation has been a major issue in this community and has been addressed (under court order) in part by a series of magnet programs scattered among the district's predominantly neighborhood-based schools. In addition, under the leadership of a dynamic superintendent, the district embarked several years ago on an ambitious revamping of curriculum that stresses new approaches to mathematics and language arts, as well as new approaches to instructional grouping. The improvement plan allows little room for school autonomy.

The fourth district, located in a large suburban county, resembles the urban districts in many ways:

- District 4 is very large, comprising more than 100,000 students spread across a county adjacent to a major urban center. The low-income areas of the district, located the closest to the neighboring urban center, are home to black families primarily. The community in which they live is tense: drug-related crime and other related problems are currently at epidemic levels and the children attending schools are accordingly fearful. The district has strong centralized leadership that emphasizes mastery of basic skills and school-by-school accountability (for example, principals' salary increments are partially tied to the test score performance of their schools). Prescriptive curricular guidelines and regular district-wide testing cycles leave little room for schools or teachers to devise their own academic programs.

The two rural districts stand in sharp contrast to the preceding four, not only in size but also in their student composition and approach to curriculum improvement:

- District 5 sits several hours' drive from a major metropolitan area. The district serves a student population of close to 12,000 students, the great majority of whom are white. The countywide district encompasses one small city and a number of small, mountain towns. Poverty levels are lower by far than the average for Districts 1-4. In its own way, the central office exerts "top-down" control of the academic program at the school level, but without a driving vision of curriculum and its adaptation for disadvantaged students.

- District 6, nestled in an agricultural valley an hour away from a metropolitan area, serves a mixed population of Anglo and Hispanic students, approximately a third of whom come from low-income families. The community is relatively stable and suffers little from the afflictions that typify the urban centers included in the study. The district is actively encouraging the improvement of curriculum programs, along the lines of state frameworks that advocate conceptually oriented mathematics and whole-language-based literacy. However, the district has adopted a more facilitative, less controlling posture than in other districts in the study. Principals are given wide latitude to shape the program in their schools, within broad guidelines established by the district.

The Schools

As a group, the schools we are studying share various characteristics. In all, 40% or more of the student population is from low-income backgrounds; in six of the fifteen schools virtually 100% are from poor families. All the schools are organized to serve kindergarten through fifth or sixth grade and draw the majority of pupils from a neighborhood attendance area. With few exceptions, the schools are generally well regarded within their respective districts.

The schools vary in size, from less than 300 children to more than 800, level of resources, and the quality of facilities--several occupy new and well-equipped buildings, while others are housed in decrepit quarters. One school is temporarily located in a previously vacant school building out of the neighborhood attendance area while its own plant is refurbished.

The set of schools in the sample include several variants on the conventional organization of elementary schooling, which may offer a different kind of academic experience to the students served.

- Year-round schools. Two of the fifteen operate on a year-round schedule, meaning that students attend school for 3 months, then take a month off, then repeat the cycle in staggered "tracks" across the 12 months of the calendar year.

- Magnet programs. Two other schools contain formally designated "magnet" programs, one aimed at mathematics and science, the other offering bilingual education to children with limited English proficiency. While each draws some children from outside the neighborhood attendance area, they nonetheless serve a primarily neighborhood-based population.

- Desegregation-related programs. Not including the magnet programs described above, several schools receive extra resources and staff as part of a district effort to counteract the effects of racial imbalance.

Beyond these structural differences, the schools we are studying vary in many respects. We made no effort to choose schools that resemble any particular profile of effectiveness. The quality of leadership, for example, varies considerably from cases in which principals have a strong instructional vision to those with none; similarly, principals' general management skills range from excellent to mediocre. Not surprisingly, the level of staff commitment and cohesiveness differs across schools considerably.

Several brief portraits of schools in the sample illustrate how community factors, structural features, leadership, and staff combine to form an "ethos" with important implications for the school as a whole. The first two schools are generally considered exemplary:

- Jackson Park School.* A small inner-city school in District 3, Jackson Park was thought of as "bottom of the barrel" until 5 years ago, when a new and forceful principal took charge with a mandate (and extra resources) to bring about change. The challenge confronting her was considerable: 100% of the children were from low-income, minority families, the school climate was chaotic, and test score performance was abysmal. Through a concerted effort to enforce strict discipline, maintain a highly structured and demanding curriculum (albeit focused on "the basics"), and increase expectations for the students, the school has improved considerably: test scores are up and the school has received awards as an exemplary elementary school.

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*Names have been changed to preserve the anonymity of the school sites.

- Maple Grove School. This school in District 5 stands in sharp contrast to Jackson Park, although it, too, has acquired a well-deserved reputation for the quality of its academic program. The school is large: the over 800 students are half Anglo, half Hispanic, many of whom have come to participate in the school's bilingual program (in half of the school, classrooms with English-dominant and Spanish-dominant children are paired and share instruction in various ways that lead to a gradual transition into English-only instruction). Staff morale is high, in no small measure reflecting the activities of the principal, who is an instructional leader in the full sense of the term. Although strong in many aspects of its academic program, the school has developed an identity as a "language arts" school, which takes special care and pride in its teaching of writing, reading, and other aspects of language instruction.

Not all schools in the sample are as "together" as these two. Two other schools demonstrate the range among sample schools, one from the suburban district, the other from an urban setting:

- Riverview School. This large school in District 4 conveys a sense of disorganization to the observer. The school population, predominantly black, is bused in to achieve some degree of racial balance in a school located within a white residential neighborhood. Violence is a prominent feature of the community life most students know, which adds an additional challenge to the school's instructional task. Extra staff of several kinds are assigned to the school, but due to a somewhat "scattered" management style, these resources are orchestrated in a complex way that makes integration of instructional services difficult. The staff are somewhat demoralized, not only because of the lack of leadership, but also due to the restrictive guidelines from the central office, which controls a great deal of what they can do in the classroom.

- Tidewater School. This elementary school in District 2 serves a mixed population of students of black, Asian, and Hispanic backgrounds from a community undergoing rapid transition in its ethnic and linguistic makeup. The school has been struggling to devise appropriate approaches to this student population, and has received some special funding for the purpose; however, the school is struggling to implement a new district language arts curriculum. The principal does not exercise an active instructional leadership role, although he is a reasonably effective manager of school operations. Overall, the tone of the school is businesslike and orderly. Although not innovative or imaginative, the school program is solid and offers most students a reasonable chance to master "the basics."

We explore the implications of school settings for academic instruction at greater length in Chapter 7, as part of our discussion of the explanations for patterns of academic instruction.

II CLASSROOM MANAGEMENT AND THE ACADEMIC LEARNING ENVIRONMENT

In order for the instructional strategies described in the coming chapters to be effective, students must be engaged in appropriate academic tasks; they must be actively involved in reading, writing, or mathematics. For this to occur, the classroom must be well managed. While orchestrating the activities and whereabouts of 20 to 35 elementary school children all day long is no small feat in any environment, it is often particularly difficult in classrooms with large numbers of children from poor families.

Many of the problems that the teachers face in the classrooms we visited are common to all schools: a range of ability levels, students who bring with them problems from outside of the classroom, insufficient personnel. These factors tend to be exaggerated in high-poverty schools, and added to these are obstacles that teachers in middle-class schools rarely have to confront. Given the demographics and the less-than-ideal working conditions, it is not surprising that several of the sample classrooms are "dysfunctional." But despite the adverse conditions, the majority of the teachers in the sample classrooms do amazingly well at creating a constructive academic environment with the odds strongly against them. This chapter will examine the failures and the successes, with a view toward isolating those strategies likely to be effective with this population of children.

The chapter will begin with a discussion of the roots of the problem in all classrooms serving the children of poverty. These are potential problems that face all of our teachers to a greater or lesser degree. Second, based on qualitative case reports done for half of the sample, we divide classrooms into four categories according to the amount and quality of student engagement overall in academic tasks. These four groups range from highly effective learning environments to classrooms where management is a serious unsolved problem. Examples will be given for each group, and issues that are central to management style will be described. Third, we address particular dimensions of classroom organization and describe how they typically appear in the classrooms of the most and least successful managers. A concluding section summarizes the implications of the management patterns for academic instruction.

During the course of this discussion, we will touch on instructional strategies that are clearly interwoven with questions of order and classroom discipline. Issues such as grouping, accountability and assessment, and integration of content areas, while generally thought of as instructional decisions, are key aspects of management as well; the connections between management and academic instruction will be more fully examined later in the study.

The Roots of the Problem in Classrooms Serving the Children of Poverty

While the rest of this chapter will examine teachers' attempts to maintain order in the classroom, it is important to note at the outset that many of the primary obstacles to an orderly and productive environment lie outside of the teacher's control. There are a series of attributes of the population of students we are studying and the communities from which they come that complicate management in any classroom. In poorly managed classrooms, the effects of these factors are manifested in especially obvious ways.

- Mobility. A poor population tends to be a transient one, in both urban and rural environments. Many of our teachers had over a third of the class leave and be replaced during the course of the year. Often new students are incorrectly assigned, and then shuffled around to many different classes. The consequences for continuity in the instructional agenda are obvious.
- Nutrition and health. Several teachers mentioned this as a severe problem, particularly in the primary grades. One principal told us that the children's diet is her most pressing concern--several of the children go for days without a meal prepared by an adult. The many children with unstable home situations are visibly exhausted, and many sleep during school time. At least two students in fifth-grade classrooms became pregnant during the course of the year.

- Drugs and violence. Many children attending urban schools included in the sample live in neighborhoods where drug traffic is constant. Some of the older children are apparently involved already, and many of the students are affected by it in various ways: by shootings in their buildings, relatives going to jail, etc.

- Family structure. The majority of the children in our classrooms come from single-parent homes; in other cases, the single guardian is not a parent at all. Teachers find this a particularly difficult problem to overcome. Children usually go home to an empty house and spend most of their out-of-school time unsupervised. Single working parents have a hard time maintaining contact with school personnel.

- Economic constraints. Students often lack the money to buy basic materials like pencils or notebooks (which are usually in short supply in these schools). Inadequate public transportation makes it difficult for children to stay for after-school activities and for parents to attend school events.

- Language proficiency. Several of the sample classrooms in one state have children who are monolingual in one of three or four different languages. Even with aides and creative scheduling, such classrooms are challenging.

But the characteristics of the students walking in the school door are only part of the story. Policies, facilities, and the availability of resources also make the job of teacher as classroom manager more difficult. The joint effects of the following factors conspire against good management in many of the classrooms we have been studying:

- Insufficient resources. Our classrooms almost universally lacked adequate instructional materials. In some cases there weren't enough textbooks to go around; in one district the same set of "consumable" workbooks have been used by new sets of students for 5 years. A great deal of time and energy goes into compensating for inadequate funds, such as the ubiquitous candy bar sales to raise money for essential materials like copier paper.

- High pupil/staff ratios. In the cases where one adult is responsible for more than 30 students, there are usually management problems. Several of our schools received extra personnel through desegregation agreements, so this was not a problem in all of our schools. Many schools had aides to alleviate the problem at least part of the day. Absenteeism among the staff, and the difficulty of obtaining substitutes, created problems even where class sizes were small.

- Physical plant problems. Many of the school buildings we visited were old and in need of repair. More commonly, noise from construction or adjoining rooms often interfered with teaching.

- External mandates. As will be described in the examples below, teachers had to deal with a number of directives from their states or districts that made life in the classroom more complicated in a number of ways. In some cases, teachers had not received adequate training to implement new curricula; in others, requirements for testing or pacing interfered with the flow of instruction or provoked student resistance.

- Lack of administrative support. Many of our teachers felt that they did not receive enough help in disciplinary matters from the principal. This was the case in all of the "dysfunctional" classrooms we studied.

- A fragmented school day. Many of the students in these classrooms qualify for a number of compensatory education programs or other supplementary services. As is discussed in greater detail in Chapter VI, they often miss time in the regular classroom and spend extra time in waiting and transitions. In some cases, there is a constant stream of students in and out of the room.

Four Types of Academic Learning Environments

Success in classroom management, unlike instructional strategies in reading or mathematics, is usually readily apparent to an observer: a class is busily engaged in academic tasks, there are few disruptions, and transitions between instructional segments occur smoothly. Teachers are often the first to admit when this is not the case; they are usually painfully aware when their agenda is not being followed.

Based on the qualitative data from the classrooms we studied intensively, we categorized the resulting academic learning environments into four groups. The criterion of interest was the amount and quality of student engagement in academic tasks.

- Group 1--Dysfunctional Learning Environments. In certain classrooms, there is a constant struggle to maintain order, and the need to gain control determines much of the interaction in the room.

- Group 2--Adequate Learning Environments. In other classrooms, the struggles continue, but the teacher is able to attain a basic level of control. As a result, some academic learning is taking place; at times, more than half the students are engaged in appropriate tasks.

- Group 3--Orderly, Restrictive Learning Environments. In this group of classrooms, an effective management system is in place and most students are seriously engaged in academic work. While a lot of learning occurs, the classes either suffer from a numbing sameness of routines or some students are consistently left out of the academic tasks.

- Group 4--Orderly, Enabling Learning Environments. These classrooms are model learning environments. Not only are all students seriously engaged most or all of the time, but energy and enthusiasm are evident while children are involved with academic tasks. Routines are much more varied in these classrooms.

Classrooms within each one of these groups are not identical to each other. Within the third group, for example, are several classrooms with a distinctly different "feel" to them, with varying degrees of visible management techniques.

We describe each type, with examples, in terms of general classroom atmosphere, evidence of preventive management, and the way teachers viewed and explained the management pattern in the room. As the discussion makes clear, each type has a characteristic "ethos" that enhances or inhibits academic learning.

Group 1: Dysfunctional Learning Environments

The study sample includes only a small number of truly "dysfunctional" classrooms. Simply put, they were not pleasant places to be. Because of the need to "keep the lid on," disciplinary matters tended to overwhelm instructional plans. The following example from an inner-city school is typical of such a room:

- Carol's Fifth Grade. There are 33 students of various racial backgrounds in Carol's combined fifth-/sixth-grade classroom. All of the students qualify for free lunch. While there are occasional bursts of enthusiasm evident, the class is often filled with an air of tension and frustration. The students seem to like and respect the teacher, but she does not let them get close to her. There seems to be a constant tug-of-war between her and the students on discipline issues.

  While Carol generally is quite stern with the students, she often allows them to socialize. They are an unusually gregarious group:

> they take advantage of every opportunity to interact with each other--whispering, calling out, passing notes, moving around--especially during seatwork time. In cyclical fashion, the noise level slowly rises beyond what Carol will tolerate. She then angrily warns the class to quiet down, and after a couple of further warnings she signs individuals up for the "2:45 Club" or for the "Clean Up Club." If the whole class continues to be disruptive, then Carol will make everyone "write lines," i.e., fill several sheets of paper with a disciplinary statement or the school's mission statement. Things quiet down for a while, and the cycle begins again.
>
> Carol's students often seem eager to channel their energy into learning activities, and they happily volunteer for group activities that involve reading aloud or writing on the board. However, whenever they have to do anything at their desks they generally succeed in avoiding the tasks entirely. Unfortunately, long periods of seatwork time usually correspond to the recess sessions that occur right outside the room's windows, as Carol tries not to schedule any activities that involve oral communication during this noisy time.
>
> In mathematics, Carol teaches the whole class together. Students are allowed to work on problems in pairs; in theory, a stronger student and a weaker student work together. In practice, the pairs rarely talk about the assignment. During the seatwork time, Carol corrects paperwork at her desk and monitors individual behavior. She knows that they need more one-on-one instruction, but she feels that the pacing specified by the district does not allow time for this. About half of the 80-minute daily math period is devoted to seatwork. Carol holds the students accountable by weekly tests, and checking off if homework is handed in.
>
> Reading is also taught in a single group, for fifth and sixth graders together. While the students are enthusiastic during the times they are allowed to read aloud, they rebel during seatwork time or ignore the teacher during questions about the story.
>
> These management issues become more pronounced by the end of the year. Especially in math, with little feedback on individual problems, many students have tuned out entirely and no longer make any effort to complete assignments or even to work on the weekly tests.

A number of the issues raised in this example are common ones in poorly managed classrooms. While seatwork always presents more of a challenge in maintaining student engagement, it is clearly more of an issue when previous direct instruction has gone way over the heads of some students. In this case, a relatively inexperienced teacher was confronted with a curriculum mandate that required that all students be taught from the same level material and not be grouped by ability. Having no specific training in this approach, Carol was overwhelmed by the more complex management issues it created. This and other dysfunctional classrooms also had the following characteristics:

As in Carol's class, the most poorly managed rooms were not constant battle zones. Although there were some nasty incidents, including a few serious fights, there were also occasional moments of laughter and warmth. In fact, study team field staff were surprised to notice that the students often seemed immune to what seemed to be a tense, highly unpleasant situation. The students had developed coping mechanisms, and in many cases managed to enjoy themselves. This energy was not, however, channeled into academic tasks.

While we were not able to observe in the first two weeks of school, it was immediately apparent in many classrooms that important groundwork had been done in establishing order for the year. In the Group 1 classrooms, however, there was little evidence of this, other than the ubiquitous rules posted at the front of the room. The dysfunctional classrooms had an apparently capricious system of cues for punishment; as in Carol's class, it would just be a certain noise level--not always the same one--or some behavior that had gone unnoticed the day before. Under such circumstances, students typically reacted and adapted to perceived personality or mood changes in the teacher more than to established routines.

All of the teachers of the dysfunctional classrooms were keenly aware of the problem. While some complained about lack of training or familiarity either with the type of student or the mandated curriculum, all expressed discontent with the administrative support for disciplinary matters. In all cases, the principal was perceived as "too soft" on behavior problems. In fact, in schools where this was the case, even the effective managers echoed this sentiment. Poor managers were also less likely to have a close collegial relationship with other staff members, and cited the lack of support from parents in developing students' social skills.

Group 2: Adequate Learning Environments

Group 2 classrooms often began the year with serious problems, and managed to improve the situation to the point that many or most students were focused on academics and completing assignments a large proportion of the time. Often, however, order itself became the agenda and enthusiasm was clearly lacking; consequently, disruptions continued to occur. For example:

- Mindy's Approach to Managing First Grade. This first-grade classroom has 30 students, of mixed race and language background. A very definite routine is in place early in the year and is followed throughout the year without exception. Each day starts out with phonics instruction, followed by worksheets done independently on the "sound of the week." Further direct instruction in reading is followed by additional seatwork. For the most part, students are comfortable in the room, because the assignments are always quite manageable for the students. They are eager to do well for the teacher, and are virtually guaranteed success.

  Mindy has few severe disruptions to deal with. The overall atmosphere of the classroom is positive, but not challenging. Students are given simple tasks and are not pushed to be creative or to grasp difficult concepts. When she does need to discipline students, Mindy is often inconsistent in her approach. She is generally more patient with the students in the morning, when she gently calls students' names to refocus them on task. Usually by the afternoon her patience has worn thin, and she sometimes yells at the students for no greater infractions than had occurred in the morning. In addition, she often talks very loudly into the faces of individual students who do not attend or who are off task. She also occasionally singles students out in front of the classroom when they do not know an answer, which embarrasses them.

  In mathematics, Mindy struggles with the new concept-oriented curriculum, and has trouble explaining difficult issues to the students. After a brief and sometimes confusing explanation, the students work in their workbooks at their own pace. The slower students get further and further behind, until by April they are 100 pages behind the faster students (and the lesson of the day doesn't ever apply to the work they are doing). Although Mindy circulates to help students with their work, there is no formal system for feedback. As the year progresses, more and more students begin to tune out, but few actual disruptions occur.

  The situation is similar in reading. In theory, all students are reading the same story--there is no grouping--but in practice students are only allowed to move on in their workbooks when they have completed all tasks for each story. Again, the slower readers are way behind, and never doing work related to the story of the day.

Group 2 classrooms achieved order, but often at the expense of meaningful academic content. The "feel" of Group 2 rooms was certainly less hostile and threatening than the truly dysfunctional environments. They might be orderly to the extent of being slightly oppressive, with little spontaneity evident, or they might be--depending on the population--quiet and passive. Also in this category were the rarer examples of teachers who had inherited a particularly well-behaved or passive group; discipline was not an issue, but the instruction bored or alienated the students.

Generally, prior groundwork for successful management was much more apparent in Group 2 classrooms than in the dysfunctional rooms--if not from the teacher him/herself, then from socialization in previous years. (The observer, and probably the teacher as well, were less likely to fear that something would explode at any moment.) Because management issues were less of a problem, fewer teachers viewed them as barriers. More typically, they described their students as unmotivated and uninterested in learning. Rather than administrative support, they often lamented the lack of support from parents in academic matters.

Group 3: Orderly, Restrictive Learning Environments

In Group 3 classrooms, it was immediately apparent to all observers that students were engaged in the assigned task, almost all the time. It was also evident (from a few brief incidents) that achieving this state of affairs was in fact a major accomplishment and took a lot of long, hard work from the teacher. On further examination, however, it was apparent that the "spark" was missing for all or most of the students. Even when assignments were completed and test scores showed that learning had occurred, there was some mild passive resistance evident, as the following example shows.

- Management in Jane's Fifth Grade. Jane is new in her school, and she has between 17 and 20 students in her fifth-grade class. Her class, like the school, is all black, and although she has no direct experience with this population, she has worked in a variety of settings with poor children. The principal places a great deal of emphasis on discipline and improving standardized test scores. From the beginning, Jane takes firm control of the class, and the level of engagement is very high.

> Jane is an expert practitioner of the Assertive Discipline System, which is used district-wide. Basically, nothing is done without a cue, a system, or a specified procedure. Most of this constant reinforcement is woven into regular instruction, and disruptions are very rare. Reinforcements come through marbles in the jar (which add up to goodies like videos or popcorn), marks on student desks, or simply the ever-present, "Thank you Curtis, I like the way you're sitting quietly." Jane smoothly inserts the management into every aspect of instruction--but the system is always running (and the students are clearly aware of it). For example, while weaving among the desks during a math lesson, she almost indetectably places a mark on the permanent tally on the student's desk if she notices appropriate behavior on the way by.
>
> In general, this results in a very orderly and mostly quiet classroom, which doesn't feel as oppressive as it may sound. While there is little spontaneity ("Think first, and don't raise your hand to answer until I say 'hands are OK'"), there is also no time wasted during transitions, instructions are clear, and enforcement is very consistent and fair. When disruptions occur (such as when an unmonitored group is doing seatwork), she handles them calmly, never letting herself get drawn into power struggles.
>
> Academic instruction follows the district-prescribed curriculum closely. Instruction relies exclusively on basals in reading, and texts and worksheets in language arts and math. Academic tasks tend to be fragmented and of short duration, with few visible connections made between one assignment and the other. For example, the 45-minute reading group is often broken up into three or four activities that come from the reading mechanics workbook and the basal reader. A similar organization occurs in math, where during a 50-minute period the students may have three sets of review exercises interrupted by a newer skill and a computation game. Students spend approximately half their day completing worksheets or problems printed in the textbook, but this work is monitored much more closely than is often the case. Grades for each piece of work are recorded every day by Jane.
>
> During the teacher-directed portions of instruction, students are eager to contribute. Jane slows down the pace for students who aren't getting it, and other students don't complain: they are clearly used to this. This is a well-managed, busy classroom, but there is rarely any visible enthusiasm, or evidence that students are curious enough to pursue any academic task beyond the minimal requirements. By the end of the year, class and teacher both seem drained from the effort involved in holding it all together.

Not all Group 3 classrooms were this meticulously orchestrated. What they have in common is the fact that the instructional agenda was clearly followed: students were involved, academic outcomes were in line with goals and expectations. Although it is not as apparent as in the earlier cases, it was clear that management concerns were still driving some instructional concerns.

Many Group 3 classrooms had a somewhat "looser" feel than the one described above. In many there was a cooperative spirit and more energy. In these cases, discipline still required hard work at times, or some students might have counted themselves out entirely. In short, in Group 3 classrooms, management either worked fairly well for all, as above, or well enough for moments of real creativity and bursts of enthusiasm--but not for everyone, and dealing with interruptions was still an important part of the agenda. By comparison with the previous groups, it was clear in Group 3 classrooms that a great deal of time and energy had been invested from the beginning of the year to put a tight management system in place. For most children, the system was running and nonnegotiable. In some cases, it left students out or inhibited spontaneity.

Having solved the major management problems, these teachers were more likely to notice that their instruction lacked a clear instructional direction. They were often aware that many students were going through the motions only, and they welcomed the chance to find out about alternative approaches. However, teachers in this group still thought of parents as a primary cause of compliant but unmotivated students.

Group 4: Orderly, Enabling Learning Environments

Teachers' styles in this group of classrooms were varied. Some fit traditional images of strict, no-nonsense teachers; others were more effusive and affectionate. Through a combination of the "right" moves, they all succeeded in making their classrooms highly productive learning environments, where students not only completed assigned tasks but clearly enjoyed coming to school to learn.

- How Maria manages her first-grade class. Maria's first-grade class in a rural area has 28 children, half Anglo and half Hispanic. In a word, the class "hums." It is a comfortable place where children

> enjoy being and doing schoolwork; the business of learning is central to everything that is done in the room. Children treat each other and the teacher with respect, as a result of her careful lessons in how to listen to each other, to offer ideas verbally to the class, and to respect what the others say.
>
> Maria's management style is calm and quiet. She is remarkably effective at maintaining order despite the fact that the classroom is one of four clustered together in a semi-open pod arrangement. She uses a combination of quiet reminders, pointing to each seating group (clusters of four desks together), with individual praise for So-and-So who is sitting nicely now. The result is that students do what she asks the first time she asks, with rare exceptions (which are quickly brought into line) and attention is not drawn to management issues very often.
>
> The principal remarked that "Maria is one of the most organized teachers in the school." Everything has a place and can be found. She has extensive training through a variety of professional development experiences in both language arts and mathematics teaching. The depth of her training is very evident--she has picked up ideas from all of these experiences and has developed a diverse repertoire of activities, many of which she uses on a regular basis. She is an active adapter of curricula for her own purposes. For example, her math program is an eclectic combination of units from DMP, Math Their Way, and the Addison-Wesley Textbook which was adopted by the district last year.
>
> In reading, Maria is giving the new mandated basal a "good try," while enhancing it with trade books from the recommended list along with some of her old favorites. She has a very clear sense of what she wants to accomplish and adapts materials flexibly to that end. Students respond to both math and reading with uniform enthusiasm and attention. By May, all of the children in the room are reading, many with relative ease, and only a few in halting word-by-word fashion.

With virtually no management issues demanding center stage, the academic focus was obvious in these classrooms. Teacher energies were freed up (largely through their own efforts) to experiment with different instructional methods. Children felt successful, were respectful of each other, and willingly approached the tasks of the day at school. A clear "system" was in place for this group of classrooms from the beginning of the year. Management concerns were seamlessly woven into the fabric of instruction.

None of the teachers in this group of classrooms were resting on their laurels. Indeed, they tended to take more of the responsibility for their students' learning than many of the less effective managers: they were somewhat less likely to blame--as opposed to consider the significance of--other influences (e.g., parents). Many of the expert managers in our sample ascribed their success to the "niceness" of their group this year. Most importantly, they were often the most eager to learn from others and expand their already impressive repertoire of instructional strategies.

Dimensions of Classroom Management

The four types of academic learning environments described above differ in both general atmosphere and in the amount of learning that is accomplished. By looking more closely at all four types, it is possible to contrast them further on at least the following dimensions of classroom organization and management strategy: (1) ways of dealing with disruptions; (2) the quality and quantity of student-teacher and student-student talk; (3) the pacing of academic instruction; (4) consistency of routines; (5) systems of feedback and accountability; and (6) teacher development of appropriate academic tasks.

Dealing with Disruptions

An important component of classroom management is the ability to handle disciplinary problems appropriately when they occur. Although they tend to happen less often in well-managed classrooms, they are usually also resolved differently.

In the least effectively managed classrooms, punishments for inappropriate behavior were typically arbitrary and unpredictable. Often the teachers themselves created the major disruptions. It was not uncommon to see a reading group interrupted by a loud admonition from the teacher to someone on the other side of the room. When a lesson is peppered with several of these incidents, it is not surprising that task engagement is intermittent at best.

Another common reaction to behavior problems in classrooms with dysfunctional learning environments was to ignore them entirely until they escalated to an unacceptable level. When this point was reached, all work generally ceased until order was restored. In the worst cases, the day's agenda was punctuated regularly by intervals of lights-out, heads-down-on-desks, and so forth. The following example is typical of this type of classroom:

- Deborah's approach to classroom disruption: ignoring the evaluation of chaos. During the course of a language arts lesson in Deborah's fifth-grade classroom, several students left the room without permission; the class rabbit got loose and jumped around the room, causing the students to twitter and chatter; a pencil flew across the room; one student was stabbed with a pencil and had lead in his hand; several boys were playing with a stencil kit rather than doing the reading lesson; several students were yelling across the room; three boys were popping paper with their pencils; several students were kicking each other; and two boys were giving a dance demonstration in the back. Once or twice, Deborah walked past a girl and didn't appear to notice that she was playing with a radio brought from home. Another time, a student turned her chair to face the back of the room whenever Deborah stood beside her. Once again, Deborah did not acknowledge her behavior. Another student started putting glue all over a basket of crayons and smearing on the desk. In this instance, Deborah did acknowledge what the student was doing and told her to clean up; however, she did not check to see if the student actually did.

  Behavior of this type occurred throughout the day, until certain offenders were put into "time out." Several of the repeat offenders, however, did not seem to care about the consequences for inappropriate behavior, and they were rarely singled out for punishment.

A third way of dealing with disruptions was through the isolation of the offenders. In extreme cases, this became a permanent situation, and certain students (almost always boys) were relegated to the periphery of the classroom for all activities. In one room, a bookcase separated a potential troublemaker from the rest of the class, and while the teacher claimed that he was given individualized instruction, the site visitor never observed this. More commonly, single students were scattered around the edges of the room with no physical barriers, but they had no deskmates, were left out of groups, and often could not hear the teacher well or see the board.

When disruptions occurred in the more effectively managed classrooms they almost never were dealt with in an arbitrary fashion--enforcement and punishment were generally more consistent. Some of the expert managers did not treat all children equally, but the variation comes from flexibility based on individual circumstances rather than changes in the teacher's mood. For example, some of the better managers reacted to infractions differently based on their personal knowledge of a student's current home situation. Unlike poor managers, they were much less likely to lose their temper or be sharper with the students at certain times of the day. Achievement of a consistently high level of student engagement almost always meant that the teacher was not an inveterate screamer; disruptions were more often dealt with quietly and privately. Among the expert managers, there were few teachers who raised their voices (although the tone of voice was often quite stern).

In Ted's first-grade class, thoughtful preventive management largely eliminated the need for radical corrective measures:

- Preventive approach to disruptions in Ted's first-grade classroom. The discipline strategies Ted used early in the year did not change. When the class as a whole became noisy, he often reinforced positive behavior of students by complimenting students or tables of students for their attention, behavior, or posture. He had students talk to other students to get their attention, and he also "counted eyes." He had a saying that if the students' eyes were with him, their minds were with him. "We're forgetting about eyes...I need to see eyes." "We're all listening together, thinking together, learning together."

  For the first half of the year, Ted also kept a list on the side board of students who had been warned twice. He called it a "think list." He often reminded the students that when their name was added, they needed to think harder. For every check they got by their name they had to spend 5 minutes at a recess "meeting" with Ted. Later in the year, he just called students' names and did not use a list. The students learned that the consequences were the same.

  The students responded immediately to Ted's discipline strategies. During one observation, the class was sitting on the rug discussing the solar system and astronauts when Ted told a student that he had to leave. With no discussion or comment, the student stood up and walked to the tables and sat down. He was later asked to rejoin the group. The class was never disrupted to discipline one or several students. These occasions were woven into the fabric of the lesson so smoothly that they could easily slip by unnoticed.

The second two strategies described above--ignoring behavior and isolation of troublemakers--were also used occasionally by the most effective managers, but in different ways. Good managers are excellent judges of when to intervene and when to overlook small infractions, mindful of the fact that an intervention is itself an interruption which might have further negative consequences for instruction. In some cases, this means overlooking small incidents in the interest of keeping the flow going.

In even the most smoothly run classrooms, it may be necessary occasionally to pull a student or two away from the rest of the group in order to keep everyone from becoming distracted. In the hands of expert managers, however, this device was used sparingly and for relatively short periods. Putting a student into "time out" in order to keep him or her from dominating the class interaction was never allowed to become a de facto tracking mechanism.

Student- and Teacher-Talk

The amount and quality of student-teacher and student-student discourse is obviously determined by many factors besides management concerns--most importantly, the requirements of specific academic tasks. The relationship between classroom discourse and management is a complex one, since the quality of talk can be both a facilitator and an outcome of effective classroom organization. While these issues will be examined more explicitly in the second year of data collection, it was apparent in our first year findings that there are some distinct patterns of classroom talk that differ in classrooms that are better managed.

In classrooms that were less well managed, discussion of behavioral matters tended to dominate student-teacher interaction--the teacher scolds an offender, the student responds to the allegation. In the more extreme cases, evaluative comments by the teacher occurred throughout lessons, and variations of, "Of course you don't know the answer--you were talking to your neighbor," punctuate all most of the interaction. Because of the predominance of management concerns, little extended discourse about academic matters occurs. In one extreme example, a third-grade teacher stated that her foremost goal in reading was for the students to "learn to sit quietly and listen"; since they had not internalized this, for the last few months of the year she did not allow them to read or do anything during the schoolwide Sustained Silent Reading Time.

As teachers become more competent managers, less talk time is devoted to procedural and behavioral matters. However, in classrooms with "adequate" learning environments (Group 2), teachers were typically still uncomfortable with extended discourse on any topic, and direct instruction tended to occur in short segments with rapid-fire, closed-ended questioning sequences. Some Group 2 teachers were trying partner and cooperative learning arrangements with varying degrees of success; without careful monitoring, these tasks seemed to be effective in engaging students for short periods of time only.

In Group 3 classrooms (orderly, restrictive learning environments), where management is effective but uninspiring, student-teacher interaction is still highly structured and formulaic, although teachers in these classrooms tended to be better managers of cooperative learning activities when they attempted them. Since an orderly classroom allows for more spontaneous activity on the part of both teacher and student, the Group 4 teachers had even more freedom to experiment with extended discussions and different forms of student-student interaction. While interaction may still be of the traditional question-and-answer type, these teachers were often more comfortable with--and more expert at managing--cooperative or peer learning activities. The following example is typical of one teacher's (Group 4) first grade:

- Spontaneous peer interaction in Beulah's first grade. Student-student and student-teacher interaction occurred frequently and fairly constantly throughout math instruction. During the lesson on counting systems, the student-student interaction increased spontaneously when Beulah instructed the class, "I want you to take out 25 cents worth of nickels. How many? Five. How many nickels in 25 cents? Five." Beulah did not tell them to work together, but the students started punching them out of the cards and counting them together. Those who finished quickly helped the others.

  During another lesson on different ways of getting the sum of five, the students worked in pairs with baskets of manipulatives to make different patterns. They came to Beulah in their pairs and showed her how many different ways they could make five. Later in the year, this pattern continued even when the students were working on computation worksheets.

> This type of peer interaction also occurred during language arts activities. In both language arts and math, the students were extremely enthusiastic about their work. This high level of engagement did not mean that this was a quiet classroom. There was often a great deal of activity and noise in the room. As students finished their work and had it checked, they began free-time activities which were student-directed and interactive.

Pacing

The pace of the instructional agenda may affect management concerns in two ways. Many teachers proceed through lessons at a brisk pace, as a management technique, and this may be a successful motivational device. On the other hand, in the dysfunctional classrooms, teachers were more likely to march through material to meet the requirements of the district's scope-and-sequence directives, unaware that the majority of students were being left behind. Many students became effectively "lost" for the year, although some were adept at mimicking appropriate behaviors.

In one classroom, for example, the following lesson took place on the day when the teacher felt she needed to cover congruence in mathematics. The teacher decided to have the students make congruent shapes with manipulatives. She handed out the blocks and said:

> "What we have here are pattern blocks. I want you to make some congruent shapes on this paper and trace them. Now these are someone else's and I don't want to see anyone stealing them. I'll come to your house and look for them. Now make some figures and trace them."

The teacher and aide then spent the next twenty minutes walking around telling students to sit down, to be quiet, and to draw their figures. Only three of the twenty-one students drew congruent figures; most just drew pictures or made bridges or other objects with the manipulatives. Students weren't bothered as long as they were on task, although many students clearly had no idea what the task was. In this way, the classroom "got through" the concept of congruence.

In the more competently managed classrooms, much of the inappropriate behavior that does occur is a result of inappropriate pacing and the resulting inability to hold students' interest. In the best-managed classrooms, pace of lessons varies more according to student response, and is rarely fixed as it often is in Groups 1 and 2. In classrooms with orderly but restrictive learning environments (Group 3), teachers were still very conscious of curriculum guidelines and often focused on "getting through" a specified amount of material in a given time period.

In the most effectively managed classrooms, the pace of instruction tended to vary by task and degree of student understanding. When the pace was uniformly brisk, special arrangements were made for students who didn't catch on immediately, whether or not there was ability grouping--for example, all students might read the same material, while the slower readers had extra practice on the same readings with an aide.

There was great variation in the amount of pressure teachers experienced to stay on track or, in some cases, to be on a particular chapter on a particular day. Furthermore, there were enormous differences in how teachers responded to this pressure. Some teachers, particularly inexperienced ones or ones new to a mandated curriculum, adhered exclusively to the scope-and-sequence guidelines provided by the teachers' manuals. Partially to give themselves a sense of structure, and partially as a management technique, they were unwilling to provide their own embellishments to the recommended activities. With a relatively homogeneous group, a brisk steady pace by-the-book can be a successful management tool. Too often, however, many students are left behind, eventually tuning out and frequently causing disruptions along the way.

More creative teachers (and those who were more confident in their management skills) were often more flexible in pacing. Some could keep up a steady beat but vary the rhythm for some students; others used creative grouping arrangements to address student differences--sometimes even when these were proscribed by the district or school management.

The interrelationship between rate of instructional delivery and classroom management underscores the complexity of searching for explanations of teacher effectiveness. While pacing can be fruitfully used as a management tool, it is itself affected by management concerns. This becomes still more complex when choices about how fast to move, how much to review, and when to move on are often constrained by decisions made outside of the classroom.

Consistency of Routines

Many teachers talk about the need for structure in classrooms with disadvantaged students. This typically translates into the establishment of consistent routines throughout the day and year, so little time is lost while making transitions and performance expectations are clear. In dysfunctional classrooms, routines do exist, but they are generally dull and repetitive (30 minutes of seatwork drill immediately following every math lesson) or they are not created with clear expectations about behavior during each segment. Routines alone, without predictable consequences or challenge, become numbing for students and they soon learn that going through the motions is sufficient. Also, even in the adequately managed classrooms where structures were clearer, the routinization of academic tasks without allowances for student differences (except with the occasional help of an aide) almost guarantee that engagement will be low for part of the class.

In the more successfully managed classrooms, there is very little "dead time" when any group of students is waiting for directions about what to do next, and this alone clearly increases the amount of time focused on academics. In the expertly managed classrooms, while structures and schedules were clearly in place, these classrooms don't suffer from the "overmanaged" feel of some of the Group 3 classrooms. The freedom that comes from having shaped a responsive and respectful group creates flexibility to change routines when new approaches seem called for.

Feedback and Accountability

This is closely related to the issue of predictable consequences, and applies equally to both management and instructional concerns. This is perhaps the area where the learning environments of dysfunctional classrooms differ most sharply from effectively managed classrooms. Indeed, in examining the characteristics of the classrooms within each of the four groups, a rather clear continuum of monitoring activity emerged. This ranges from almost no--or extremely capricious--attention to what students are doing, to occasional feedback for behavior and achievement, through careful record-keeping with grades or points, to regular use of formal and informal assessment to inform further teaching practice. Simply put, the best managers are outstanding monitors and the poorest managers are inattentive to, or unaware of, student progress.

In dysfunctional classrooms, monitoring and feedback are sporadic at best, and consequences are often random. It is important to note that while a clear consistent management system will maintain order, constructive engagement in academic tasks generally results only when feedback is prompt and useful for those tasks. In poorly managed classrooms, both disruptions and incomplete assignments may often go unnoticed. In the third-grade classroom described below, the students' attention was minimal:

- Sporadic monitoring in Monica's third-grade classroom. Monica's classroom is best described as mildly chaotic and tense. Monitoring strategies are sporadic at best: sometimes she uses a point system for good behavior, along with checks and names on the board for bad, but there seems to be no pattern as to when this system is in operation.

  The noise and level of inattention rises at various times throughout the day, until the entire class is reprimanded (loudly) or one child is singled out for her wrath. During instructional activities, her monitoring is extremely inconsistent. For example, when she asks, "Is book a noun or a pronoun?" and half the class yells out each answer, she will say "Right" and move on to the next prompt. When five kids are at the board doing math problems, she only pays attention to one--sometimes not even noticing if the others have copied the problem incorrectly.

  In reading, accountability for workbook tasks was so haphazard that completing assignments was generally understood to be voluntary.

In the Group 2 classrooms, more academic work was done (i.e., more tasks were completed). In general, this was a result of a more structured feedback system than existed in the dysfunctional environments. There were more likely to be predictable consequences if assignments were not completed (e.g., 10 minutes less of recess if math homework is not done). Often a systematic approach to accounting for assignments (done/not done) was sufficient to inspire completion, and this was evident in most Group 2 classrooms. However, this was not enough to inspire dedication to, or interest in, the task, as it gave the student no feedback about quality of effort.

In the classrooms with orderly learning environments, students were generally more closely monitored, both for disciplinary infractions and for academic work. These above-average managers were more likely to tell an observer exactly how any student was doing on a given task, and the students themselves received ongoing praise or correction. In some cases, the teachers actually used information from constant interaction with the students to adjust pace or tasks, or to expand the review portion of the lesson. In the less effective classrooms, this use of feedback to inform instructional planning was extremely rare.

Monitoring in the most effectively managed classrooms was nearly constant, and the incentive system worked well because students knew they would be judged on the quality of their effort. These teachers were the legendary ones with "eyes in the back of their heads," and students were keenly aware of this. Moreover, even among those teachers who closely followed a mandated curriculum, pace and approach were modified according to an ongoing assessment of student need.

- Constant monitoring in Veronica's third-grade classroom. In Veronica's third-grade classroom, student involvement in academic tasks was extremely high, despite the fact that the students represented a wide range of achievement levels. Much of Veronica's success in dealing with student differences came from her constant monitoring of student progress. Following the district mandate, most of language arts instruction occurred in a whole class arrangement and Veronica eliminated reading groups. A lot of reading instruction involved the whole class reading text together, and Veronica was very concerned about the needs of the low-ability readers. A lot of her instructional strategies were developed to help the slower readers understand the meaning of the text.

  Veronica occasionally worked with small groups of students selected at random. The purpose of these groups was to assess student progress. During approximately 10-minute sessions, she had students take turns reading a few sentences. She usually did not interrupt

> them as they read, but would sometimes explain the meaning of words in the text she thought they might not know, and occasionally ask some questions to see if the students were understanding what they were reading.
>
> During the limited amount of weekly seatwork time (consisting of a teacher-prepared packet of materials related to that week's theme), Veronica worked with the students who appeared to be having trouble.

Designing Appropriate Academic Tasks

Teachers clearly differ in their ability to draw on a wide repertoire of management techniques. Sometimes a structured system works well, but even then teachers must be flexible enough to deal with unexpected disruptions and unfamiliar problems. While fairness and consistency are general advantages in maintaining classroom order, some teachers do make allowances for individual students' circumstances: what works for some children will not necessarily be right for everyone.

Perhaps the most difficult skill of all involves the ongoing selection of appropriate academic tasks. Teachers in sample classrooms varied enormously on this dimension. This essential component of effective instruction is related to pacing, monitoring, and grouping arrangements. Many of the less effective managers were more likely to rely exclusively on published materials for assignments and sequence. Expert managers were more able to adapt materials flexibly to their changing student needs. We observed only a few teachers who were consistently able to achieve a balance between challenge and opportunities for success. Like appropriate pacing, this is both a component of an orderly classroom and of effective instruction. The majority of the disruptions and off-task behaviors we observed in the classroom can be traced to either frustration or boredom, which in turn emerge from tasks that are too difficult or from routinized tasks that are completed mechanically and without interest.

Implications for Academic Instruction

The patterns of management we have detected have profound implications for academic instruction and learning. Although the analysis reported in this chapter does not trace these links in any detail for particular subject areas, it provides the basis for the following observations.

Effective management is, in part, a prerequisite for academic instruction and learning. The problem of establishing classroom order confronts teachers in the kinds of schools we are studying from the very first day of the year. At that time, laying a secure foundation for human interactions in the room over the year is all-important; without a reasonable resolution of the ensuing struggle, not much academic learning of any kind will take place. The most effective managers describe the process of laying this foundation in almost the same terms as any aspect of their curriculum: it is a curriculum to be taught, and must be explicitly and systematically introduced to students, with associated rewards, sanctions, and reinforcement. Success with this curriculum early in the year may not be accompanied by immediate academic learning--little may have been conveyed about the content of reading, mathematics, or whatever, but children feel safe, respected, and attended to, at the same time that they feel pushed and expected to perform. The importance of reaching this point cannot be underestimated in classrooms serving large numbers of children from low-income families.

The classroom management pattern is simultaneously a consequence of the kinds of academic work children do. In a paradoxical way, the resolution of management issues reflects children's response to the kind of work and work routines they experience. Students in the kinds of classrooms we are studying are typically not patient with work that is frustrating (because it appears too difficult, incomprehensible, or embarrassing) or, on the other hand, mindless (because it demands too little of them, or is simply repetitive). Thus, in classrooms in which there is a great deal of seatwork that is unconnected (in the students' minds) to anything important, interesting, or even familiar, teachers face a more difficult time establishing order effectively in the classroom. This is ironic because some of these teachers emphasize seatwork precisely because they want to control the class. Classrooms with an interesting and varied diet of academic work are more likely to fall into an acceptable or exemplary management pattern.

The resolution of management issues--manifested in teachers' management styles--cuts across subject areas. Although there are important connections between how the classroom is managed and the way particular subjects are taught, teachers in the study classrooms all exhibit a basic management style that pervades all parts of the school day. Those who manage reading instruction well are for the most part equally effective managers during mathematics lessons. Conversely, classrooms with dysfunctional learning environments exhibit poor management in all subject areas. The management challenge to teachers in schools serving the children of poverty thus encompasses all areas of the curriculum.

Choices about management approach affect the kind of academic learning experience available to children. At the same time that management issues tend to be resolved at a level that transcends the teaching and learning of particular subject areas, choices of management approach predispose those subjects to be taught in certain ways or rule out certain kinds of teaching or both. The "tight"--and, from one perspective, "effective"--management of Group 3 classrooms, for example, appears to inhibit spontaneous responses of students to tasks, ideas, or discoveries they may be making as the school day unfolds. In such circumstances, extended discussion of the meaning of what has been read (a key dimension of reading instruction in Chapter IV) or student-student interaction while writing (an important dimension of writing instruction, as described in Chapter V) are unlikely to happen. Thus, the nature of the management system can interfere with, or enhance, the prospects for certain kinds of instructional activity.

The more classrooms exhibit orderly, enabling learning environments (Group 4), the more room there is for academic/instructional considerations to guide or control what is taught and how it is taught. On the whole, we were struck by how often the academic learning environment was set by management choices made with little thought to academics, rather than vice versa. In the extreme case of the dysfunctional classroom, this fact is obvious, but in Group 2 and 3 classrooms, where academic learning is happening, it was driven as much or more by management considerations as by academic-learning goals. On the other hand, the more classrooms approached Group 4, the more freedom teachers felt--or created for themselves--to experiment with, and enrich, the academic curriculum they were teaching.

These themes bear more careful scrutiny in the second year of the study, as we delve deeper into the dynamics of curriculum and instruction within, and across, particular subject areas. There is still much to learn about various management issues, among them how culturally diverse classrooms are most effectively managed, how and how much teachers help students develop responsibility for their own learning, and what teachers do to make instruction personally meaningful to students.

PART TWO:

PATTERNS OF CURRICULUM AND INSTRUCTION IN THREE SUBJECT AREAS

In this part of the report, we examine curriculum and instruction in mathematics (Chapter III), reading (Chapter IV), and writing (Chapter V). Our focus is thus subject-specific and therefore deals with only one piece of the instructional day at a time. But taken together, these subject areas account for a half to two-thirds of the instructional day in the schools we are studying.

The advantages of examining one subject at a time are obvious: only by isolating particular subject areas can we answer the question: What is being taught? In addition, it enables us to consider how, and whether, teaching approaches fit with the content that is being taught.

However, another part of the picture is ignored by the analyses that follow. What goes on in other subject areas (and across the day as a whole) is context for what takes place in any particular subject. Cross-cutting aspects of the instructional day are not a focus of this interim report, although some cross-subject issues will be taken up in Part Three. A more extensive treatment of these issues will appear in the final study report, following the second year of the investigation.

A Note About Data Sources

Much of the analysis reported in the ensuing three chapters draws heavily on both qualitative and quantitative data sources.

As in the discussion of classroom management patterns in Part One, we have made extensive use of the qualitative reports developed for intensively studied classrooms (one half of the sample). Cross-case analysis of these reports provided the initial source of the typologies and other descriptive material appearing in the three chapters. Appendix A (Methodological Notes) explains in greater detail the kinds of qualitative data that were collected and how they were reported and analyzed.

The quantitative data appearing in tables and text in the three chapters come from two primary sources: teacher logs and data entered on coding forms by observers following their visits to sample classrooms. (Several numbers derive from background data sources about classrooms or schools.) A few comments about each type of data will help the reader understand the different types of measures that were used. For further detail on particular measures, the reader is referred to Appendix A and Appendix B (Data Collection Instruments).

Teacher Log Data--All teachers filled out a daily log regarding what they taught each day in reading, writing, other aspects of language arts, and mathematics. Teachers commenced filling out logs soon after pretesting in the fall and ended in late spring at about the time of the posttest, for a total of approximately 120 instructional days. Analytically, we have relied on summary measures that indicate of all instructional days, the percentage on which the teacher checked any given item on the log form (topic of math instruction, level of comprehension on which reading instruction focused, type of writing assignment, etc.) Occasionally, we created indices or other aggregate variables based on the log data, as noted in text.

Coded Observational Data--Observational data refers either to events observed during lessons (e.g., rates of engagement in academic instruction, or to the 2-week period during which observations fell (based on observations, interviews with teachers, and examination of the materials they were using). There were three such periods during the year. For purposes of analysis, we extracted three kinds of measures from the observational codes:

(1) The likelihood that something did or did not take place (e.g., whether or not there was supplemental instruction in mathematics, reading homework was assigned, or students were held accountable

for language arts assignments), averaged across the three visits (variables ranged between 0 and 1).

(2) The observer's rating of some aspect of instruction (e.g., the degree of emphasis on language mechanics skills, degree of reliance on the mathematics textbook) on a scale of 1 to 3 or 1 to 4 (occasionally 1 to 5), averaged across the three visits.

(3) An actual count of events taking place within the observed day or 2-week period (e.g., the number of minutes students actually read text, the number of assignments across the 2-week period requiring students to compose extended text), averaged across the three visits.

Notes in text explain the particular meaning and direction of scales, but the reader is referred once again to the Appendices for more detail on the source, construction, or properties of particular measures.

III MATHEMATICS

Many prominent groups--e.g., the National Council of Teachers of Mathematics (NCTM), the American Association for the Advancement of Science, and the National Academy of Science's National Research Council (NRC)--suggest that major changes are needed in the way that elementary mathematics is conceived and taught. A wide variety of studies and analyses have demonstrated that the current primary goal of elementary mathematics education--as reflected in the intended, the enacted, and the implemented curriculum--is that children should achieve proficiency in rapidly and accurately performing arithmetic computations. Reformers aim to reduce the time and energy spent on reaching this goal, while placing a greater emphasis on higher-order thinking skills (such as solving novel or more complex mathematics problems than those traditionally taught). In addition, emphasis is being placed on including in the elementary mathematics curriculum a far wider range of mathematics content than in the past, such as statistics and data analysis.

Table III-1 summarizes the NRC's view of seven transitions that are needed in mathematics education; many groups believe these transitions are, in fact, in the early stages of being implemented on a wide scale. Still, it is understood even by advocates of change that making a full transition to a new view of mathematics education is at best a lengthy and difficult undertaking. Mathematics education provided in most elementary classrooms today more closely resembles that provided 50 years ago than what the reformers hope to see in classrooms a few decades in the future.

The changes being advocated by the mathematics education community apply to all classrooms nationwide, regardless of the student population. However, in schools serving large numbers of poor children, curriculum and instruction in mathematics is even more likely than in other schools to focus on computational "basics," to give short shrift to such goals as developing inquiry and

Table III-1

SEVEN TRANSITIONS NEEDED IN MATHEMATICS EDUCATION

1. The focus of school mathematics is shifting from a dualistic mission--minimal mathematics for the majority, advanced mathematics for a few--to a singular focus on a significant common core of mathematics for all students.

2. The teaching of mathematics is shifting from an authoritarian model based on "transmission of knowledge" to a student-centered practice featuring "stimulation of learning."

3. Public attitudes about mathematics are shifting from indifference and hostility to recognition of the important role that mathematics plays in today's society.

4. The teaching of mathematics is shifting from preoccupation with inculcating routine skills to developing broad-based mathematical power.

5. The teaching of mathematics is shifting from emphasis on preparation for future courses to greater emphasis on topics that are relevant to students' present and future needs.

6. The teaching of mathematics is shifting from primary emphasis on paper-and-pencil calculations to full use of calculators and computers.

7. The public perception of mathematics is shifting from that of a fixed body of arbitrary rules to a vigorous, active science of patterns.

Adapted from Everybody Counts, National Research Council, 1989.

problem-solving skills, and to ignore the need for students' active involvement in mathematics and science learning. There are many reasons why this occurs, including the fact that students in these schools less often have contact with teachers highly qualified to teach mathematics (Oakes, 1990). Another problem is that, as with reading and writing, many teachers, curriculum planners, and even many parents too easily slip into the belief that the students cannot, or should not, be expected to handle anything more.*

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* International studies showing that American mothers were the most satisfied with their children's performance in mathematics, and with the school's performance, suggest that the problem of low parental expectations is a serious one in the United States for many children (Stevenson, Lee, & Stigler, 1986), not merely those in low-income families.

The vignette in the introduction to this volume (page 3) of James' mathematics classroom illustrates what can result from such low expectations: students do not even get the basics, let alone anything more sophisticated.

All of this suggests that a random sample of classrooms serving high proportions of children from low-income families would show a rather depressing picture of mathematics curriculum and instruction. However, as was explained in Chapter I, the sample of classrooms included in this study was not selected at random. The goal was to include more classrooms than average in which alternative approaches to curriculum and instruction are in use, and more classrooms in which the achievement of disadvantaged students is high, relative to the general population of classrooms serving these children. As a result, the study has been able to focus in some depth, over a period of nearly one full academic year, on a number of classrooms in which interesting departures are being made from "typical," "traditional," or "modal" practices in elementary mathematics education.

In these mathematics classrooms, we looked carefully at various aspects of both curriculum and instruction to determine what different patterns of curriculum and instruction might exist and then to identify the factors that seem to best explain why a certain pattern prevails in some classrooms but not in others. Before identifying different types of classrooms (based on observed patterns), we begin with a description of mathematics curriculum and instruction in the full sample of classrooms.

Overview of Mathematics Instruction in Grades 1, 3, and 5

As noted in Chapter I, the classrooms included in the study are very diverse, ranging from those in inner-city schools to rural areas, from racially segregated to ethnically heterogeneous, and from "special" (notably several located in a mathematics/science magnet school) to "typical." In this section, we address three questions related to mathematics instruction in this diverse set of classrooms: What is taught in mathematics across the year? Who teaches mathematics? How is mathematics taught?

What is Taught in Mathematics Across the Year

Mathematics--or arithmetic, at least--has long been considered one of the basic subjects in the curriculum, something which is necessary for all students to learn. Study data confirm what one would expect to find: that mathematics is taught nearly every day, and that arithmetic computation dominates the curriculum. Table III-2 illustrates major findings concerning what is taught across the year, by grade.

Teacher log data were used to determine the major topics emphasized day by day across the school year. Teachers were able to indicate any one or any combination of five topics each day (arithmetic, geometry, measurement, statistics/probability, and graphs), as well as a catch-all "other" category (including, for example, logic puzzles). To discriminate within the topic of arithmetic, teachers were instructed to mark which operations and quantities were involved (such as multiplication of decimals), using a 9 x 7 matrix to represent all the possibilities. (See Appendix B for a copy of the Teacher Log used.)

Across the year in grades 1, 3, and 5, about 75% of all days that mathematics was taught teachers marked "arithmetic" as one of the main topics of instruction. If anything, these data underestimate the emphasis on arithmetic. For example, the "measurement" category was to be marked only when specific units of measurement were being taught--feet and inches, for example. It seems likely that some teachers inappropriately marked this category if arithmetic problems involved measurements, even though students had long since learned the units and were instead being drilled on arithmetic computations.

No other topic besides arithmetic was marked as often as 20% of the time at any grade level. The apparent exception--21% for "other" in grade 1--actually represents multiple topics, such as logic puzzles, odd versus even numbers, primes, properties such as commutativity, definition of negative numbers, etc. Taken as a whole, the curriculum at these three grade levels typically places five to twenty times (or more) emphasis on arithmetic

Table III-2

WHAT IS TAUGHT IN MATHEMATICS ACROSS THE YEAR, BY GRADE[a]

Variables	Grade		
	1 (n = 25)	3 (n = 24)	5 (n = 22)
▪ Percentage of all instructional days on which math is taught	91	93	91
▪ Percentage of days (in math) that include emphasis on--			
Arithmetic	73	80	75
Geometry	7	13	8
Measurement	12	16	13
Statistics/Probability	0	3	1
Graphs	4	11	6
Other (e.g., logic puzzles)	21	13	9
▪ Percentage of days (in math) that include emphasis on--			
Building skills or routine applications	57	67	62
Developing conceptual understanding	47	48	45
Applications to novel problems	18	23	23
▪ Six most frequently taught topics in arithmetic (percentage of all "topic-days"[b] in arithmetic)--			
Whole numbers only:			
Numbers/numeration	22	15	5
Operations			
Addition	29	18	4
Subtraction	23	16	--
Multiplication	--	18	12
Division	--	7	16
Combination (+,-,x,/)	5	7	10
Other	10	--	--
Number sentences	3	--	--
Numbers/numeration (decimals)	--	--	6
Subtotal, six highest	91	81	53

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[a] Unless otherwise noted, all items show average percents (0% to 100%).

[b] Teachers could indicate up to three topics per day. The total "topic-days" thus exceeds the actual number of instructional days.

computation as on any other given topic. Measurement and geometry were the most frequently taught topics besides arithmetic. However, more than 30% of all the teachers indicated that they never taught measurement, while the comparable figure for geometry was about 40%.

Computer programming (e.g., the LOGO computer language) is an example of a topic that one might have expected to see but that was not encountered in any site visits, nor did teachers report it frequently on the Logs. Statistics/probability is another topic seldom addressed in these classrooms--70% of the teachers never taught it. Both of these topics (and particularly the latter) are examples of content areas which the mathematics education community would like to see receive more time and attention in the elementary grades--as suggested, for example, in the NCTM's Curriculum and Evaluation Standards for School Mathematics. Although these and most topics other than arithmetic received little attention, the averages presented in Table III-2 mask some important differences among classrooms at each grade level, with some classrooms covering a significantly broader array of topics than most.

While the dominance of arithmetic computation was to be expected, it is somewhat surprising how many years are devoted not simply to arithmetic, but to the arithmetic of whole numbers. Thus, even as late as fifth grade, nearly half of all the time spent teaching arithmetic is devoted to teaching the four basic operations as applied to whole numbers. Only one other topic in arithmetic--instruction about numeration of decimals (i.e., place value)--makes it into the six most frequently taught arithmetic topics at the fifth-grade level, and with a rather low frequency, at that. This finding echoes those of many earlier studies which have emphasized the high degree of repetition and review found in the mathematics curriculum of the United States,* but shows that the situation, at least among these schools, is if anything worse than one might have expected. Yet many people still seem to think it quite appropriate that fifth graders spend endless hours drilling multi-digit multiplication and division problems. Long-standing practices are difficult to change.

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*See, for example, The Underachieving Curriculum (McKnight et al., 1987).

It is important to focus not only on what is taught in mathematics, but also on what the goals of mathematics instruction are conceived to be. In this regard, it is noteworthy that instruction at each grade level emphasized "developing understanding of mathematical concepts or ideas" on fewer than half of all days (as reported on the teacher logs). Much more often, teachers emphasized either "building skills in using procedures or symbols" or "routine applications of mathematical procedures" (such as typical word problems). In fact, they probably underestimated the emphasis on these two categories. Observers noted many classrooms (e.g., one-third in round two of the visits) in which the entire emphasis of mathematics instruction appeared to be on getting the right answer rather than on understanding the process by which problems are solved. The balance between an emphasis on teaching skills and on teaching for conceptual understanding is a matter of importance to which we will return in later sections. Here, we simply note that many other studies (e.g., NAEP) have found cause for concern about the lack of understanding of mathematical concepts displayed by students in the United States.

By teachers' own reports (on the logs) only about 1 day in 5 were students exposed to "novel" problems--and observers reported a smaller percentage than this. The routine problems dominate. This means, for example, that while studying addition of whole numbers, students can expect virtually all the problems they encounter will require addition of whole numbers and, most likely, nothing else. This pattern of instruction does not seem optimal for development of higher-order thinking skills.

Who Teaches Mathematics

The typical teacher in the mathematics classrooms in this study has been teaching at the same grade level for many years and has substantial experience with students similar to the ones she (or he) is now teaching, as shown in Table III-3, which displays data about these and various other characteristics of the instructional staff, by grade level.

Table III-3

STAFF WHO TEACH MATHEMATICS IN SAMPLE CLASSROOMS, BY GRADE

Characteristics of Mathematics Instructional Staff	Grade 1 (n = 25)	Grade 3 (n = 21)	Grade 5 (n = 23)
Numbers and Types of Staff			
▪ Number of instructional staff in the regular classroom for mathematics	1.8	1.7	1.4
▪ Pupil-teacher ratio	14:1	16:1	19:1
▪ Percentage of classrooms with additional staff--			
A second regular teacher	1	17	7
An aide (from any source)	54	40	21
Staff Expertise and Experience			
▪ Number of years teaching--			
This grade	8	8	7
These kinds of students	10	10	9
▪ Richness of teachers' background for teaching mathematics, index scaled from 1 (least) to 6[a]	2.5	2.6	2.4
Teacher Satisfaction and Expectations			
▪ Teachers' satisfaction with teaching as a career and with support in current position, scaled from 1 (least) to 4[b]	3.2	3.1	3.1
▪ Teacher expectations for student success in mathematics, scaled from 1 (most students won't be able to succeed) to 4 (all can succeed at grade level)	2.7	3.1	2.7

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[a] Index summing categories of professional development activity related to mathematics--see Appendix A.

[b] Observers' ratings of teacher satisfaction and expectations for student success--see Appendix A.

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How Mathematics Is Taught

This study confirms what many earlier studies (e.g., Stodolsky, 1988) have found: that elementary mathematics instruction is heavily weighted toward a narrow spectrum of instructional techniques, especially teacher lecturing and seatwork. This is also true for the classrooms in this study, as shown in Table III-4. For example, the only technique used more than half of all days at each grade level in the classrooms in this study sample was individual seatwork. Fully half of the mathematics period was typically used for this purpose, according to the observers.

Teacher lecture/explanation was too often lacking in application to real-life problems (aside from basic financial transactions), and skills were taught in isolation from one another. As an example of the "one-dimensional" quality of much teacher presentation, observers noted during one round of the observations that 40% of the teachers represented a mathematical idea in just one way during the observed lesson. Thus--to offer a concrete example--instead of representing a fraction as a ratio, as a geometric picture (such as a pie sliced appropriately), and as a subset of individuals in the class compared to the whole class, teachers too often selected a single representation (a ratio, say) and never provided alternative representations to unlock the imagination of the students.

Although the study data do show that some discussion occurred about one-third of the days in mathematics, most of the discussion was of a restricted form. A typical discussion of a mathematics word problem might focus on who in the class can identify the key words that supposedly indicate what arithmetic operation is called for (words and phrases like "how many more than...," "have left," and "in all"), or who can define some specialized term (e.g., quotient, divisor). Few discussions in mathematics call upon students' personal knowledge, ask students to pose questions of their own, or respond to open-ended or complex questions posed by the teacher.

Table III-4

HOW MATHEMATICS IS TAUGHT: GENERIC INSTRUCTIONAL STRATEGIES, BY GRADE

Variables	Grade 1 (n = 25)	Grade 3 (n = 24)	Grade 5 (n = 22)
Teacher-Directed Instruction: Extent (scale) of responsibility given students to guide their own learning, on a scale from 1 (= entirely teacher-directed) to 5 (= entirely student-directed)	2.3	2.1	2.0
Grouping: Percentage of classrooms using some form of grouping for mathematics instruction	24%	35%	40%
Student Activities: Of all days in mathematics, average percentage in which students--			
Do individual seatwork	54%	60%	56%
Listen to teacher presentation or explanation	44	50	54
Engage in class discussions	33	38	35
Work collaboratively with peers	25	23	30
Take tests or other assessments	8	19	12
Are given mathematics homework	28	34	40
Homework: Of all days in mathematics, average percentage on which homework was assigned or pending	33%	40%	33%

Collaborative work with peers most often is also a restricted activity, directed largely by the teacher. By contrast to open-ended problems which may be posed, say, in reading ("decide what is the main idea in the chapter and be ready to provide evidence for your choice"), in mathematics student groups most often work on the same short, one- or two-step problems they normally do by themselves. Typically, they work with the students seated just next to them (e.g., at a small cluster of desks). In a few cases, teachers in the sample classrooms made efforts to group students of different ability levels, but this was much more the exception than the rule.

According to the teacher logs, homework was assigned in grades 1 and 3 only about one-third of the time that mathematics was taught, and only slightly more often (40%) in grade 5. This finding is consistent with the low number of minutes the National Assessment of Educational Progress (NAEP) reports students spend weekly on mathematics homework--for example, 61% of third graders reported to NAEP they do 1/2 hour or less of mathematics homework each week (Dossey, Mullis, Lindquist, & Chambers, 1988). A significant number of teachers in the study appeared to be ambivalent about homework, feeling that the students most in need of help and those with the least supportive home environment, were least likely to complete homework--and thus would fall further behind their peers if homework were frequently assigned. Therefore, these teachers felt homework would simply exacerbate differences between students.

These techniques--seatwork, teacher lecture/explanation, class discussions, group work, and homework (including in-class review)--account for the great majority of instructional time in mathematics. Not only is the set of techniques a rather limited one (at least as implemented) but, as noted earlier, the net result is that, on average, teachers spend more days focusing on skills, procedures, and routine applications (such as simple word problems) than they do on developing students' understanding of mathematical concepts or ideas. The question of the appropriate balance between a skills approach and a conceptual approach to mathematics is considered below.

The total amount of time devoted to mathematics instruction was about 45 minutes per day at each grade level (setting aside those few days on which mathematics was not taught at all). Most of the classrooms allocated more than twice that amount for instruction in language arts (including reading). Only in the school with the science and mathematics magnet program did the time allocated for mathematics differ significantly from the overall average. There, the typical time devoted to mathematics instruction was about 70 minutes.

In recent years, there has been an increasing interest in the use of two different sets of materials in mathematics instruction: mathematics manipulatives (such as unifix cubes and cuisenaire rods) and technological devices (notably calculators and computers). Most advocates of mathematics education reform believe that there should be a growing use in elementary schools of tools for doing, and for understanding, mathematics. Numerous meta-analyses show that manipulatives can increase student achievement in mathematics (see, for example, Walberg, 1990), and similar findings have been reported for calculators for more than a decade (e.g., Suydam, 1979). The use of calculators and computers is being promoted not simply to increase achievement, however, but for many other reasons, as well, including allowing students to develop facility with tools for doing mathematics which are now an every day part of the workplace and even the home environment.

The study data show a mixed picture regarding use of these types of materials. As shown in Table III-5, mathematics manipulatives are used quite often in grade 1 (more than 40% of all days). However, their use declines in the upper grades. While in an abstract way this seems appropriate, NAEP data and many other sources suggest that very large proportions of students in the upper elementary grades still would benefit from concrete representations of such concepts as fractions, percents, speed and distance problems, and so forth.*

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* For example, on the 1985-86 NAEP mathematics assessment only about 40% of seventh-grade students could correctly identify the point on a number line that represented a simple fraction, like 1-1/2, suggesting that at least 60% could benefit from more practice with concrete representations of fractions (Lindquist, 1989).

Table III-5

HOW MATHEMATICS IS TAUGHT: INSTRUCTIONAL MATERIALS, BY GRADE

Variables	Grade 1 (n = 25)	 3 (n = 24)	 5 (n = 22)
Teaching With Manipulatives and Educational Technology			
▪ Percentage of classrooms in which the following were used at some time(s) during the year--			
Calculators	0	14	26
Computers	64	72	73
▪ Manipulatives (e.g., cubes): of all instructional days, percentage on which these were used	43	23	14
Reliance on a Traditional Textbook			
▪ Observer ratings, from 1 (exclusive reliance on textbook) to 4 (little or no use of textbook)	2.5	2.0	2.0

Calculators were used in only a few of the classrooms under study. By contrast, computers were used in about two-thirds of the classrooms, to one degree or another. In nearly every instance, computer use took place in a computer lab and consisted of the use of drill-and-practice software, or arithmetic-based games providing such drill and practice. The use of software designed to teach higher-order thinking skills was very rare.

Teachers relied heavily on the mathematics textbook in most cases. The first-grade teachers were more comfortable than those at the higher grades providing instruction that was not based directly on the text, judging from the frequency with which this occurred at each grade. Those teachers who either depart significantly from the textbook in use or who are following textbooks with an unusual orientation (as defined by modal practice) form an interesting subpopulation. (An example of a nontraditional text used by teachers in the sample is Developing Mathematical Processes, or DMP, developed by the Wisconsin Research and Development Center.) Often, nontraditional textbooks put a greater emphasis on topics besides arithmetic computation. Similarly, in one state, new textbooks adopted by the state for elementary mathematics do embody a somewhat broader conception of the content of the subject. (This issue is further explored in Chapter VII.)

To summarize, mathematics instruction in the sample classrooms is--on average--much like that provided throughout the United States. However, different types or clusters of classrooms in the study represent several distinct ways of teaching mathematics, some of which offer students more than arithmetic-as-usual. Before discussing and illustrating the types of classrooms observed, we must first discuss several key dimensions used to create the typologies.

Key Strategies for Maximizing Mathematical Thinking and Understanding

Two key strategies for maximizing mathematical thinking and understanding form the basis for examining and analyzing what is going on in sample classrooms. The two dimensions are: (1) the extent of the instructional orientation toward conceptual understanding of the material; and (2) the range of the content studied in mathematics. By selecting these dimensions, we are hypothesizing that they will identify more powerful forms of mathematics instruction for the segment of the student population on which the study is concentrating. Below, we discuss each dimension in turn.

By focusing attention especially on these two dimensions we do not mean to imply that other dimensions of instruction (e.g., maximizing time on task, utilizing educational technology) are unimportant. Quite the opposite is the case: there are many dimensions of instruction which have already been established as having important effects on student learning, and which have been well documented.` Instead, we focus on these two dimensions because they focus attention on the aspects of content and approach that are so often given short shrift in the schooling of children from low-income backgrounds (see Zucker, 1990).

Teaching for Understanding: Beyond a Skills Approach

In earlier sections of this chapter we have raised the question of the relative balance of attention to skills and routine applications, on the one hand, and to developing understanding of mathematical concepts or ideas, on the other. It was noted that teachers typically spend more days focusing on the former than on the latter approach to instruction. Two contrasting examples may help to illustrate the differences in approach. (Somewhat extreme examples have been selected for the purpose of contrast.)

- A skills approach: long division taught to remedial students. The math resource specialist at the school has gathered about a half-dozen fifth graders into his cramped office for a lesson before lunch. The students have a hard time concentrating. Mr. K asks the students to divide 52 by 6, in long division form. A number of the students make sizeable errors as they attempt to do the problem. As they finish, he comments to the group, "I had some of you do the steps in the wrong order. Remember, 'divide, multiply, subtract, bring down.' An easy way to remember this is as 'Daddy, mommy, sister, brother.'" This mnemonic refers to the steps in which long division problems should be done. Using the example on the board as a model, the students practice with some more problems.

- A conceptual approach: multiple solutions to word problems. Ms. P's questions are posed, she told the observer, in order to get her students to think and, when possible, to answer their own questions. On one occasion she asked a student to describe the process he used in arriving at the answer to an arithmetic-based word problem. Although the student's method (which he explained to the class) was correct, she asked the group if there was another way to solve the problem. A second student described a different approach, also correct. There was then a class discussion of the merits of solving the problem using the two techniques. During the course of the discussion students in effect modeled for one another the process of understanding the problem and representing it in terms of arithmetic operations. Comparing the two approaches raised a number of interesting conceptual questions about the mathematical equivalence of what appeared superficially to be unrelated sequences of operations.

The use of these contrasting examples is not intended to imply that an emphasis on skills and procedures is "bad" and an emphasis on concepts is "good." All mathematics classrooms that we observed--perhaps all mathematics classrooms in the nation--include some emphasis on both. The questions that are important, and complex, have to do with the proper balance between these approaches, ways to combine and reinforce the two, and when to focus on one or the other.

The study's literature review (Knapp & Shields, 1990) and other work (e.g., Porter, 1989) strongly supports the idea that developing students' conceptual understanding of the mathematics they are taught (a) should be a central goal of instruction and (b) too often, is not, in fact, a central feature of classroom practice. This would certainly help to explain why students do poorly on conceptual items (in NAEP, for example).

Expanding the Range of Content Across the Year: Beyond Arithmetic

Of all of the transitions in elementary mathematics education that are under way, the one that seems most important is the increasing variety that is being introduced into the curriculum. Slowly, the curriculum is moving away from a single-minded emphasis on developing arithmetic computation skills. Some reports (e.g., McKnight et al., 1987) have claimed that the almost obsessive preoccupation with arithmetic is one of the central problems explaining the poor performance of American students, especially those from economically disadvantaged backgrounds. If these students are to think mathematically and solve problems in domains beyond arithmetic, then they must be exposed to these domains. Therefore, an important dimension on which to examine classrooms in the study is the range of content taught across the year--in particular, the extent to which this goes beyond arithmetic.

The teacher logs and the coding forms developed for the study, coupled with such other sources of data as teacher interviews and examination of materials (e.g., textbooks), allow the classrooms to be described on this dimension in fairly rich terms. The mathematics taught in the sample classrooms varies from a nearly total orientation toward arithmetic computation in

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some, to others in which a much wider range of material is taught (such as graphing, statistics and data analysis, geometry, measurement, and logic problems or puzzles). In some of the classrooms, surprisingly little time and attention is focused on arithmetic, per se.

Examples from two third-grade classrooms may help to illustrate how the differences in content covered across the year looks to an observer:

- Arithmetic only: a focus on "basic skills." This district's scope and sequence for third-grade mathematics is one page long. Most of it focuses on arithmetic. The other strands (such as problem solving and geometry) consist of a single objective apiece (except for measurement, which has two objectives). For example, the only objective for graphs and statistics is "interpret a bar graph"--nothing whatever about constructing any type of graph, chart, or table. The observed curriculum in this particular classroom was even more narrow, focusing entirely on computation skills (including some drill-and-practice sessions in the computer lab). Problem solving, thinking skills, and word problems were simply not emphasized here.

  The textbook (Addison-Wesley) was the major source of materials used for instruction. During the year, the teacher focused on such skills as "carrying," "regrouping," and the multiplication facts. Some use was made of manipulatives; for example, the teacher used popsicle sticks to illustrate multiplication. However, the teacher feels more confident about teaching reading and language arts than mathematics, and used a very limited repertoire of instructional techniques in mathematics. Nonetheless, she maintained a high degree of student engagement in mathematics, and made it clear she felt that mastery of basic skills was important. Some of her comments to students were: "We have to keep at this," "I'm sure we can get it," and "I want to write 100 on every paper."

- A broader array of topics: variety by design. The curriculum in this school was developed by the teachers. It is closely aligned to objectives set by the state (including statewide assessments of student achievement) and by the district. Textbooks from Addison-Wesley are the source of some materials used, but many others were developed by the teachers themselves. The school's own scope and sequence for third-grade mathematics is lengthy (six pages) and detailed. The portion of the document covering "numbers and number systems," which includes arithmetic computation, is only one-third of the whole scope and sequence. That strand plus two others--geometry and measurement--are considered the "core" of the third-grade mathematics curriculum. In addition, five other strands are integrated into the year's work: problem solving, logical reasoning, statistics and probability, and patterns and sequences (which is also called functions in some documents).

> Despite the lengthy list of topics and skills to be covered, the class had completed the third-grade curriculum by May and began working on some fourth-grade skills. One of the teacher's key strategies for covering a lot of material was to present students with problems that require more than routine skills, which are carefully sequenced, and which involve groups of students. Student groups reported to the whole class about their success or lack of success in completing the problems, on their social interaction, and on their feelings. On occasion, students were asked to make up their own problems. Answers to many oral questions were expected to be answered in complete sentences and while standing (a tradition in the Philippines, where this teacher had taught earlier). Each student's parent had to sign his/her homework sheet every night of the week.

Once again, it is important to clarify that teaching arithmetic is not "bad," nor is teaching other topics intrinsically "good." Instead, the balance is what is of interest and, in particular, the extent to which teachers range beyond the all-too-common unitary focus on arithmetic. It should also be emphasized that arithmetic can easily be taught in a much broader context than in most classrooms, so that the teaching of graphs, statistics, and data analysis, geometry and other subjects includes continuing attention to mastery of arithmetic.

Setting up two dimensions also allows us to look at the intersection of the two. For example, are the teachers who focus on a broad array of topics the same ones who teach for conceptual understanding? In the next section we develop further the idea of a matrix of classrooms.

Measuring the Key Strategies

We measured the extent to which classrooms adopted each strategy by creating index variables based on the teacher logs and observational data, as follows.

- Degree of Focus on Conceptual Understanding. Index 1 measures the extent to which observed instruction focused on conceptual understanding. It is based on the coding form completed by an observer after each classroom visit. One item used to create the index asks, "in what ways did mathematics instruction during this period get at conceptual understanding?" Of the eight choices, only one indicates "no real focus on conceptual understanding," and this was assigned a value (for the index) of zero. Any other choice was rated a "1."

Similarly, a second and third item ask about applications of mathematics to nonroutine problems, and (separately) to the life situations of the children. If either of these responses was affirmative (the teacher used this approach to instruction), they were similarly given a value of "1." The index is then the average of the sum of these three values across the visits. The maximum possible value is 3 (if all three approaches to instruction were used during each observed period), while the minimum is zero.

- Range of Topics. Index 2 measures the extent to which content over the year includes topics besides arithmetic. The index is based on the teacher logs. The item used to create the index identifies which topic (or topics) was the focus of instruction for each day mathematics was taught. The index, for each teacher, is then formed by averaging the number of topics other than arithmetic which were marked each day. The minimum value possible is zero, and the maximum possible (if all other topics were taught each day) is five.

There is considerable variation on both indices, and the two are not highly correlated with one another, although there is some degree of association. This corresponds to the reports of the observers in the memos that were prepared (for the intensive classrooms only). (Note that the total number of classrooms for which both indices are available is 70--not the full 85 classrooms in the study sample--primarily because teachers in one district did not complete teacher logs.)

Differences in Key Strategies by Grade

There was relatively little difference across grades in the average values for the indices measuring the use of strategies for maximizing mathematical thinking and understanding, as shown in Table III-6. This fact is not surprising, given the fact that classrooms were selected for variation in approach (among other factors, as discussed in Chapter I), though one might anticipate some systematic differences that reflect the age level of the children.

The table also presents generally low average values for Index 2 across all the grades. This means that arithmetic dominates the curriculum, as noted earlier in the chapter; thus, very few other topics (such as measurement or geometry) are taught on the average day.

Table III-6

HOW MATHEMATICS IS TAUGHT:
KEY STRATEGIES, BY GRADE

Variables	Grade 1 (n = 25)	 3 (n = 24)	 5 (n = 22)
Orientation Toward Specific Goals			
■ Emphasis on conceptual understanding, novel problems, and real-life applications (Index 1), scaled from 0 (no emphasis) to 3	1.6	1.1	1.6
■ Average number of topics other than arithmetic taught per day (out of a possible 5) (Index 2)	.5	.6	.4

Four Types of Mathematics Classrooms

Taken together as independent dimensions of mathematics instruction, the measures of the two strategies for maximizing mathematical thinking and understanding generate a simple typology of classrooms. The first two types focused heavily or solely on arithmetic, one with an emphasis on conceptual understanding, and the other without. The second two types aim at a broader array of mathematical topics, once again, with or without an emphasis on conceptual understanding. Although this typology oversimplifies the situation somewhat, by not revealing the continuous nature of each dimension, it captures important differences among the classrooms we are studying.

Based on index values, we were able to array the classrooms in the four cells of the 2-by-2 matrix implied by the typology, as shown in Table III-7. Qualitative reports of visits to half of the intensive classrooms validated the indices and demonstrated that there is a close correspondence between what observers saw and described in detailed qualitative reports, on the one hand, and the classroom types as categorized in the matrix, on the other hand. In the case of mathematics, more than three-fourths of the decisions

Table III-7

A TYPOLOGY OF MATHEMATICS CLASSROOMS IN THE SAMPLE

DEGREE OF FOCUS ON CONCEPTUAL UNDERSTANDING		RANGE OF TOPICS: Arithmetic Only	RANGE OF TOPICS: Arithmetic Plus Other Topics	
	Skills Plus Concepts	21	17	38
	Skills Only	26	5	31
		47	22	69

about classroom types made on the basis of the qualitative reports alone (before the index numbers were even computed) were consistent with decisions made on the basis of the indices. Where there was any disagreement, the former took precedence over the latter.

The types differ in various ways. Other features of the instructional approach differ systematically, by type, in ways that would be expected, as shown in Table III-8. For example:

- Multiple-topic classrooms average more time on mathematics per day than arithmetic-only classrooms.
- Whether or not they focus only on arithmetic or a wider range of topics, classrooms emphasizing conceptual understanding are likely to spend more time on mathematics, use manipulatives and calculators, and rely less on textbooks.
- Classrooms in which multiple topics are taught with an emphasis on conceptual understanding are most likely to use manipulatives or calculators and least likely to rely on the textbook.

The four types of classrooms look and feel different from one another in various ways that are not easily represented in these numbers. We describe each type below, with examples from qualitative reports of classrooms that were studied intensively.

Table III-8

PATTERNS OF MATHEMATICS INSTRUCTION, BY CLASSROOM TYPE

	Classroom Type			
	Arithmetic Only		Multiple Topics	
	Skills Only (n=26)	Skills + Concepts (n=21)	Skills Only (n= 5)	Skills + Concepts (n=17)
Key Dimensions				
▪ Emphasis on understanding, novel problems, real-life applications (Index 1)	1.0	1.4	1.3	2.3
▪ Breadth of topics covered (Index 2)	.2	.5	.6	.8
Other Variables				
▪ Time spent on mathematics (minutes per day)	38 min.	40 min.	67 min.	48 min.
▪ Use of manipulatives and educational technology--				
Manipulatives: percent of days used	14%	36%	19%	45%
Calculator use--				
Percent of days used	1%	3%	2%	6%
(Percent of classes using)	(12)	(10)	(20)	(24)
Computer use--				
Percent of days used	8%	7%	12%	8%
(Percent of classes using)	(65)	(67)	(60)	(65)
▪ Reliance on textbooks: Observer judgment (where 1 = exclusive reliance on textbook; 4 = little or no use of textbook)	1.7	2.1	2.0	3.2

Classrooms Focused on a Broad Array of Topics, With a High Emphasis on Conceptual Understanding

Seventeen classrooms (25%) were categorized as focusing on a broad array of topics, with a relatively high emphasis on concepts (teaching for understanding). In the overall sample, fewer classrooms were included in this category than in either of the two cells in the matrix that focused almost exclusively on arithmetic.

Not only are a wide variety of topics covered in the classrooms in this group but, in addition, the organization of the class and the materials in use are often different from what is found in the other types of classrooms. Two examples in inner-city settings located in different states provide a sense of what mathematics instruction in these classrooms is like:

- Hannah's third-grade mathematics class: implementation of an ambitious state framework. Hannah appears to be doing an excellent job of implementing the relatively new state framework for mathematics education. While she emphasizes arithmetic computation skills throughout the year, she also integrates instructional strands relating to geometry, measurement, problem solving, logical reasoning, statistics and probability, and patterns and sequence. Hannah frequently uses manipulatives to help teach concepts. Also, cooperative learning groups are used often in her class, and in fact about one-third of the class time is in some sense "student-directed," which is exceptionally rare. Hannah consistently makes connections between one mathematics concept and another, thereby presenting mathematics as a unified discipline, not just a set of different skills. For example, when discussing one operation (such as multiplication) and its properties (e.g., the associative property) Hannah often connected these with other arithmetic operations.

- Pam's third-grade mathematics room: a magnet school approach. At this science and mathematics magnet school, mathematics is "departmentalized," so that some staff teach only mathematics. Third graders entering Pam's classroom are greeted with abundant displays of science and mathematics posters and materials, including math games, bulletin boards on mathematics, and a calendar (which is often integrated into instruction). Class usually begins with a "Mind Bender" problem placed on the overhead projector. Throughout the school's curriculum, there is a lot of emphasis on higher-order thinking skills, so that, for example, calculators are used to solve a variety of "realistic" problems, and computers are used for logic problems (as well as for skill practice). Each quarter a school-wide project in science or mathematics is incorporated into every

> classroom. The school uses the DMP mathematics series (Developing Mathematical Processes) which teaches mathematics through measurement and a "problem solving approach," and which includes units on topics not frequently taught (such as statistics and probability). Pam routinely likes to aim for two or three different representations of key mathematics concepts and procedures (even more than the number used in the DMP text), so that if children do not understand one representation they are likely to understand another. About one-and-one-half hours are allotted to mathematics every day (far beyond the average nationally or in the sample).

These two examples illustrate classrooms in which there was a very strong emphasis on learning concepts, on learning to think (recall the student-directed activities in Hannah's classroom), and on a wide variety of mathematical content. Although these classrooms display many of the features that reformers advocate, the full vision of mathematics teaching noted at the beginning of this chapter is not in place, at least not yet. For example, few classrooms in this group made use of calculators, used computers for teaching advanced skills (as opposed to practicing arithmetic computation skills), emphasized the importance of problem formulation by students, or assigned students complex project work in mathematics similar to what is often assigned in social studies.

Nonetheless, the classrooms in this group constitute a kind of "existence proof" demonstrating what is possible in classrooms serving large numbers of disadvantaged students. Suggestions that a curriculum including a broad array of mathematics topics, combined with a very strong emphasis on learning to think independently, cannot be sustained in schools serving poor children do not stand up in the face of evidence that such classrooms can be found even in difficult, inner-city environments.

This is not to say that creating and sustaining these environments is easy, or that teachers are routinely provided the kind of support they need to accomplish this. The second type of classroom illustrates some of the pitfalls along the road to reform of mathematics education.

Classrooms Focused on a Broad Array of Topics Than Arithmetic, But With a Low Emphasis on Conceptual Understanding

Just five classrooms in the sample (7%) focused on a broad array of topics using a skills-only approach (that is, with little emphasis on conceptual understanding). The existence of even a small number of such classrooms shows that it is possible to use a skills-only approach to teach a broad array of topics--although it appears to be an unusual combination.

These classrooms might be characterized as failed efforts--or, at best, as partial successes--in the reform of mathematics education. It is unlikely that teachers would teach a broader array of topics than arithmetic in the absence of the current reform "thrust," so the fact that the attempt is being made in these classrooms can be taken as a sign of success. At the same time, providing instruction in these topics using only a skills approach misses half or more of what the reform effort is all about. For example, in one state, the state framework aims to have elementary mathematics students formulating problems, pursuing conjectures, experimenting, and appreciating the beauty of mathematics. None of this is likely to occur unless students are expected to master concepts and think for themselves about procedures--even to the point of inventing their own, on occasion. Classrooms in which only skills are taught will not meet these expectations.

In a sense, the teachers of the classrooms in this group have "learned the words but not the tune" of reform. Not surprisingly, these classrooms are found in settings where new approaches to mathematics instruction are being actively advocated. Three of the five cases were in the state that is pushing reform, while another is in a science/math magnet school (also pushing reform), but in a different state. An example of what such a classroom is like is provided by a case from another inner-city school:

- Ronnie's third-grade mathematics class: uneasy with the state framework. Ronnie is fairly uncomfortable with mathematics--and she freely admits it. This creates particular problems, because the state and the district are pushing for reform. The district is using a new textbook, Invitation to Mathematics, which takes a more conceptual approach than many series. Also, the students at this

> school go to a central mathematics laboratory once a month, and the school's mathematics specialist helps to shape the curriculum. But Ronnie's reaction is that she must teach specific content (such as geometry) and must use particular approaches (such as manipulatives), whether she is comfortable with them or not. "I wanted to work on subtraction, but we are supposed to do whatever they are doing in math lab, so I'm doing geometry," she remarked in December. Ronnie did use manipulatives, but did not do so in a meaningful way. She allowed students to play with materials (e.g., blocks), but seemed unable to use those materials to help students learn concepts. In general, her teaching of concepts was as something to be memorized ("this is a right angle and you have to learn it," she told the class). Such an approach makes the use of manipulatives far less useful. Over the year, little time was devoted to mathematics--another reflection of Ronnie's uneasiness with the subject.

The teacher in this example clearly felt torn between what the district, the textbook, and the school specialist represented as the right way to approach mathematics, as compared to her own, more narrow view of what effective mathematics curriculum and instruction should look like. As it happens, this teacher has long lived in one of the poorest housing projects in the area, and she has never taught or lived in any other kind of community. Despite her state-university training and participation in inservice workshops, she is still uncomfortable teaching mathematics and appears to view the subject in rather narrow terms. She illustrates an obvious dilemma for those who would reform mathematics education: how to create change in classrooms in which the teachers are not only uncomfortable with mathematics but view an arithmetic-only, skills-only approach as basically good and appropriate?

Ronnie's experiences raise questions about the support that is provided to teachers as they implement new approaches to mathematics instruction. There is not yet a lot of data that has been collected for this study about inservice instruction (more will be collected during the second year), but it seems that insufficient attention has been given to providing both initial training and follow-up support to teachers who may be uncomfortable or at least unfamiliar with the new topics and approaches which many districts and schools are promoting. The absence of good training and support naturally reduces the likelihood that substantial changes in curriculum and instruction will both take place and persist. For example, Ronnie did not attend any training sessions to familiarize her with the new and rather different mathematics textbook adopted by the district. Other research on the implementation of new state frameworks for mathematics have found that teachers may never even have seen the framework documents, let alone read and understood them (Guthrie, 1990).

Classrooms Focused on Arithmetic, With a High Emphasis on Conceptual Understanding

The third group (21 classrooms, or 30% of our sample) is characterized by a "traditional" focus on arithmetic computation, but these teachers also place a substantial, often explicit emphasis on the importance of understanding the mathematical concepts underlying the skills.

Teachers in this group tend to be an interesting, impressive set of individuals. For example, a number of the teachers are recognized as exemplary or lead teachers (such as one third-grade teacher who was the school's lead science teacher, and who has now moved into a math/science magnet school in the same county). Many have what one researcher termed a "commanding presence." Students typically pay close attention to what is happening in these mathematics classrooms because the teachers insist on it.

Nearly all of the teachers in this group have established clear mathematical thinking as a prominent goal for their classes. For example, a teacher with a combined fifth/sixth grade stated that her general goals in mathematics were "to have the students think, problem solve, comprehend and be creative." Such goals contrast sharply with those established by most teachers in the arithmetic-computation/skills-only group, who are more likely to emphasize mastery of discrete skills, doing well on tests, or covering the book.

The teachers in this group do not typically believe that there is a "trade-off" between teaching for mastery of skills or teaching for understanding (nor do the cells of our matrix imply an either-or dichotomy of this kind). Many of them include skill drills as well as activities (such as using manipulatives) and other instruction aimed at developing understanding of concepts. Several examples may help to provide a picture of the kinds of activities that characterize these classrooms:

- Myrna's first-grade mathematics class: automaticity as well as understanding. This young first-grade teacher, who works with very impoverished children in an inner-city setting, sets as her major goals in mathematics that students develop an understanding of mathematics (primarily numbers, numeration, and arithmetic) and are able to perform arithmetic computations accurately. She includes exercises based on drill and repetition that are aimed at developing "automaticity" (e.g., practicing counting by fives and by tens is something done almost every day, with the class happily chanting aloud in unison). Drill-and-practice computer software is often in use by the students. These types of activities are oriented toward skills and procedures. Yet Myrna also makes almost daily use of mathematics manipulatives to help children develop an understanding of mathematics concepts. Myrna is an expert at using manipulatives, including Unifix cubes, cuisenaire rods (to develop concepts of place value), and cardboard coins and clocks. She has been observed having students "act out" addition and subtraction problems before the class (to understand the meaning of the operations), and frequently asks students who are having trouble to "think about it" (e.g., "someone's taking it away from you ... will you have less or more?").

- Third-grade mathematics in Maria's room: mad minutes and word problems. In this third grade, math class often begins with a 2-minute timed test called "Mad Minutes," focusing on straight, numerical arithmetic problems. Students could advance from one level to the next (e.g. to more complex multiplication problems), and on a given day about four different levels of test are in use. This much is a skills approach to instruction. At the same time, during the teacher-directed portions of the class, Maria's questions typically focus on students' understanding of concepts (such as borrowing/regrouping). On most Fridays, instruction involves the use of calculators, and is aimed at applications of mathematics using "real-world" (messy) numbers. Maria also places a lot of emphasis on word problems involving arithmetic, in part because the students did poorly on that portion of the statewide mathematics test the preceding year. But the word problems are also consistent with Maria's goal that students learn to apply mathematics in the world, not just do disembodied numerical problems on worksheets.

This group of teachers tends to place a high value on children's thinking, and on their understanding of the material. However, the way that the teachers approached this goal differed significantly from one classroom to the next. For example, several of the teachers followed the textbook quite faithfully; others used the textbook often, but supplemented it with other materials and approaches; and in the other classrooms, textbooks were hardly used at all. One of the teachers who abandoned the textbook as the year went on commented that, "there's not much in there for them" (her first-grade students); she was enrolled in a mathematics methods course at a local university and became adept at devising her own lessons.

There was a similar diversity of approaches toward the use of calculators and computers. Several classrooms in this group made almost no use of these electronic tools, while they were regular features of instruction in others. Still, little application of computers to teaching advanced skills was observed in any of the classrooms in any group.

The use of manipulatives in the classrooms was highly correlated with grade level (a pattern that, as explained earlier, is true throughout the study sample). The first-grade teachers in this group made extensive use of manipulatives (as in the example given above), the third-grade teachers made less frequent use of manipulatives, and in the fifth-/sixth-grade classes there was almost no use of these kinds of items (Unifix cubes, beans or other counters, and so forth).

Classrooms Focused on Arithmetic, With a Low Emphasis on Concepts

Twenty-six classrooms (or 38%) focused almost entirely on arithmetic, and concentrated on skills (with little or no emphasis on understanding mathematical concepts). In the overall sample, this is the classroom type with the largest number of classrooms.

These classrooms are characterized by a high priority placed on the goal of mastering computation skills. Doing the procedures rapidly and accurately is what is highly valued in these classrooms, rather than understanding why the procedures work, or learning how to apply the knowledge to new situations. Worksheets consisting of groups of similar numerical problems form a handy symbol of this approach to instruction (although, of course, they are used in classrooms in other groups, not only this one).

At one extreme, the teachers in this group exhibit very little actual instruction, relying instead on worksheets to accomplish their goals. An example of this style is as follows:

- Renee's approach to first-grade mathematics: worksheets. The typical mathematics lesson in Renee's classroom consisted of ten percent lecture/demonstration, and 90% seatwork. The worksheets covered what was in the textbook. However, in part because there was so little real teaching, there was almost no focus on the meaning of the skills and procedures conveyed by the worksheets. In the small amount of time that instruction did take place, there appeared to be little connection between underlying concepts and the procedures for working problems. Throughout the year, it appeared as if the teacher was just carrying out the curriculum without a lot of attention to whether children were really understanding what was being taught, or the underlying concepts (such what addition really means, and why or when one would want to it). Renee's main interest appeared to be whether children could solve such problems as 6 - 3. Not only was there a great deal of seatwork, but there was almost no student-student interaction unless children surreptitiously helped one another.

Although that classroom represents an extreme in the amount of seatwork that was assigned, the lack of student-student interaction is all too common (and further diminishes a student's already-low opportunity to rehearse what he/she has learned, ask questions, or learn from someone--another student--whose style is different than the teacher's). However, neither the use of more concrete materials nor the use of "game" formats (in which students have at least some minimal interaction) necessarily changes the restricted view of what constitutes mathematics that characterizes the classrooms in the group, as the following example illustrates:

- Jenny's approach to fifth-grade mathematics: variety in materials and activities, with a fragmentation of academic tasks. Assertive discipline is a hallmark of Jenny's classroom, and of this particular school as a whole. Her mathematics instruction moves quickly from one segment to another, and it appears this is in part a management device. Children are constantly kept "entertained," as activities shift rapidly before boredom sets in. During a 50-minute mathematics period, the students may have three sets of review exercises interrupted by presentation of a new arithmetic skill, as well as a game based on arithmetic computation drill. The emphasis during all visits was completely on computational skills and getting the correct answers. Instruction was almost entirely based on the textbook, with its pretests, chapter reviews, and chapter tests. However, play money was used occasionally, game formats (sometimes with teams) were

> a part of many lessons, and there were visits to the computer lab to use mathematics software (of the drill-and-practice, game-based variety). Because of the rapid pace, the fragmentation of segments, and the lack of extended discourse or interaction in the classroom, the researcher observed that "a typical mathematics class has the feel of a sluggish video game." Students in this classroom learn to see mathematics as a series of discrete, skills-oriented tasks to be completed for the teacher, punctuated by such "rewards" as use of the computer and occasional classroom games.

The teachers in these classrooms are a diverse group. For example, some like mathematics, and some do not; some are well liked by their students, while others are not. A few of the teachers in the group believe that they are aiming at higher-order thinking skills ("teaching the children to think"), even though the data suggest that little time is spent by them helping their students develop conceptual understanding. More often, however, teachers in this group express such opinions as, "These students need lots of drill and practice," or "The children cannot learn higher-order thinking skills if they don't have the basics," or "They cannot move on to division until they've mastered multiplication." These teachers adopt a linear view of instruction that is at odds with the alternative views of learning and instruction highlighted earlier in this report and in the study's first report (Knapp & Shields, 1990).

A few teachers in this group do make use of manipulatives, but a far lower proportion than found in the groups focusing on a broader array of topics (which were described above). Among the teachers in this group who do use manipulatives, most do so in order to motivate students. One teacher said as much: she uses manipulatives simply because she thinks they capture students' interest and attention. By contrast, teachers in groups which focus on conceptual understanding are much more likely to point to cognitive reasons for using manipulatives (e.g., the first-grade teacher who said, "the concepts just aren't there yet; going back to the concrete is the only thing to do").

The great majority of the teachers in this group stick close to a traditional textbook. They do not tend to supplement the textbook with puzzles, novel problems or other types of print-based mathematics activities drawn from the vast storehouse of such material that is available (e.g., through journals and specialized publications). In a few cases, the newer, less traditional textbooks are actually subverted by the teachers. For example, one third-grade teacher (who appears to be a poor teacher in all disciplines) said she "prefers texts with few words," and indeed she was observed to use a lot of very traditional worksheets to "supplement" the textbook.

Relatively few teachers in this group make use of calculators, despite the recommendation of the NCTM that "appropriate calculators should be available to all students at all times." One teacher interviewed for the study did suggest she would buy a calculator out of each of her paychecks until she had a good supply--but she was the exception. Indeed, part of the story of non-use of calculators does seem to be that the schools and classrooms do not have them in stock. More than that, however, few teachers volunteered that they want to use calculators. Such a stance is most easily understood in the arithmetic-computation/skills-only classrooms, because these teachers may well believe the use of a calculator defeats the purpose of mathematics instruction, namely learning to compute. One fifth-grade teacher in this group, becoming frustrated with the poor performance of a student with a long division exercise, told her class, "This is the problem with calculators and parents who do homework and don't explain." Yet our data suggest that few, if any, of the students in her class have ever used a calculator in school.

On the other hand, the use of computers was quite common (occurring in nearly two-thirds of the mathematics classrooms in the sample). Only a few of the teachers in this group used computers extensively, but it was not unusual to find that students went to a centralized computer lab once a week or once every other week to practice arithmetic skills. Often, the software was in a game format of one kind or another, e.g. rewarding students with laps around a simulated race track based on the number of arithmetic problems answered correctly.

IV READING

As in the case of mathematics, reading instruction in the classrooms we are studying takes place at a time when national concern about improving reading is high and sweeping proposals for reforming reading--indeed, language arts instruction as a whole--are being given serious consideration in many quarters. While reading experts are more often divided than mathematics educators on the nature of the problem and its solution, there is nonetheless widespread support for certain broad principles guiding the approach to reading instruction.

In particular, when considering the task of teaching the children of poverty to read, there appears to be increasing encouragement for teachers to depart from a conventional model of reading instruction that emphasizes the teaching of "basic" reading mechanics skills (e.g., decoding). Many experts currently advocate a view of reading curriculum and instruction that emphasizes meaning and deemphasizes discrete skills taught in isolation, wide exposure to appropriate text, and material that connects with students' experiences and backgrounds (Knapp & Turnbull, 1990). Reading instruction of this kind represents a significant departure from what has been the norm in schools serving the children of poverty (Knapp & Needels, 1990). The classrooms in our sample are spread across a continuum from those that have approached reading and language arts instruction in the "tried-and-true" manner that has long been thought to work for disadvantaged children to those that are attempting a variety of nontraditional approaches.

In this chapter we summarize what we have learned so far about reading instruction in the classrooms we have been studying, first, by describing what is taught, and how, across the school year, by grade, and, second, with reference to instructional strategies that appear to maximize children's understanding of what they read.

Overview of Reading Instruction Across Grades and Across the School Year

Previous research has indicated that instruction in reading is the centerpiece of the elementary school curriculum, consuming on the average 30% of the typical 5- to 6-hour school day (Anderson et al., 1985). Our data confirm this. If anything, in the schools and classrooms that we visited, reading and reading-related instruction played an even more prominent role in the overall curriculum.

In the first section of this chapter, we provide a broad brush look at the nature of reading instruction in the sample classrooms. As in the preceding chapter concerning mathematics, we answer three questions: What is taught? Who teaches it? How is it taught?

What Is Taught in Reading Across the Year

Table IV-1 presents indicators related to the content of reading instruction--at the broadest levels--across the school year in first-, third-, and fifth-grade classrooms. All data in this table are drawn from logs completed by the classroom teachers. With one exception, each line of data represents an average proportion of instructional days in the school year when a particular aspect of reading instruction occurred.

The Nature of the Basal Readers--Looking at the first variable--types of materials read, the table shows that in first-grade classrooms, teachers reported that students used their basal readers on 62% of the days that school was in session. The average proportion of days that students read from a reading textbook declined steadily across the grades. At all three grade levels, teachers indicated that reading instruction included having students read in trade books (i.e., books such as one might purchase in a bookstore or borrow from a library) on about one-fourth of all school days. Taken together, these two types of reading materials account for over 60% of student interactions with text at all three grade levels. Older students,

Table IV-1

WHAT IS TAUGHT IN READING ACROSS THE SCHOOL YEAR, BY GRADE

	Grade		
	1 (n = 25)	3 (n = 24)	5 (n = 20)
▪ Types of materials read: Average percent of days that students read in:			
Published basal reader	62%	55%	40%
Trade books	26	23	24
▪ Degree of reliance on basal series: Average observer rating on a 4-point scale (1 = exclusive reliance)	2.0	2.1	2.5
▪ Frequency with which reading mechanics skills were taught: (average percent of all instructional days)			
Explicit phonics	31%	5%	6%
Implicit phonics	39	16	12
Whole-word recognition	56	43	32
Word analysis	32	30	23
Fluency practice	42	28	20
▪ Focus of comprehension instruction: (average percent of all instructional days)			
Recalling/locating information	47%	42%	40%
Literal understanding/summarizing	40	33	34
Deeper understanding	29	26	25
▪ Explicit instruction on literary forms, genre, or analysis: (average percent of all instructional days)			
In conjunction with reading or writing	24%	20%	19%
Out of context	7	5	5

however, appear to be spending more time with other types of materials* than are children in the primary grades.

In all but two of the classrooms that we visited intensively, during the formal reading instruction period, children most frequently read from a commercially published textbook series that included a teacher's edition with suggested activities and questions for each selection, and assorted related materials such as workbooks and reproducible worksheets. Typically, teachers proceeded through the units of these basal readers in order and followed the publisher-developed line of questioning to determine if students were comprehending what they read.

Two types of basal readers were in use in these classrooms: (1) standard basals or (2) a new format referred to as a "literary reader." In a few classrooms, both types of basals were available and in use.

The literary readers are a very new addition to materials used for reading instruction; most carry a publication date of 1989. In the late 1980s, reading textbook publishers were challenged to produce new series that would meet California's revised state frameworks for reading instruction--guidelines that relate several of the principles of a whole-language approach to reading, including integrated reading and writing instruction and the use of unexpurgated reading selections drawn from the best literature for children.** The result is a new type of basal reader specifically designed to offer children more interesting, higher-quality reading material, with accompanying supplementary materials which, if used as specified, require students to do a great deal more writing than the norm. In more than half of the intensively studied classrooms, teachers were using the literary readers for the first time during school year 1989-90.

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* These materials may include, for example, supplementary materials that accompany a basal series, textbooks in the content areas (i.e., social studies, science, health), or materials with a newspaper format such as those published by Scholastic Press.

** California, it should be remembered, adopts or approves textbooks at the state level. Because of its size and buying power, the major textbook publishers find it essential to be responsive to this state's curricular mandates. Because of its dominance of the textbook market, changes in curriculum and instruction in California have a large impact on what happens across the country.

In contrast to traditional basals, the literary readers worry less about controlling the readability level, adhering to an author's original words rather than editing out and rewriting to a formula that introduces new vocabulary words very gradually and deliberately. Each thematically organized unit in the text is usually accompanied by a longer piece of literature, with paperback copies for each child. Supporting materials emphasize comprehension skills and require considerably more student-generated writing than the old short-answer workbooks and worksheets.

As different as their look and overall philosophy of literacy are, however, the literary readers remain basal texts and teachers tend to treat them as such. The manual tells teachers what to do and what to ask. There are units to get through more or less on schedule. Although the parts of lessons related to introducing or reinforcing decoding skills in traditional readers are largely omitted from the literary readers, the units do include skill lessons on vocabulary, reference skills, syllabification, and other topics that parallel the more conventional texts.

In the districts that have recently adopted literary readers, teachers felt committed to giving the new books a fair trial. However, a number of them expressed reservations about the difficulty level of the selections and accompanying activities, particularly in situations where the new books were accompanied by a mandate to use whole-class instruction. According to some teachers, the difficulty of the materials forced them to concentrate on making sure that students understood the literal meaning of the text, at the expense of developing students' capacity to interpret or analyze what they were reading at a deeper level. Whether or not it was because of the textbooks, our observations do indicate that even among very good teachers, the pattern of teacher questioning about reading passages focused heavily on having students recall factual information.

Only two teachers in the intensively observed group had abandoned textbooks entirely:

- In an urban, multiracial, fifth-grade classroom, the teacher uses a literature-based curriculum that she and a colleague designed themselves, supported by a grant. All the novels read in her class promote ethnic and racial understanding. Her goal is to help children comprehend big ideas such as prejudice and justice while continuing to develop their reading skills. Through discussions and other interactions with the students, she models the principles of tolerance and fairness that she hopes will become part of their value system as a result of the reading program.
- In one first-grade classroom, the teacher uses a basal reader only at the very end of the year, and only then to give her students exposure to what she knows they will encounter in second grade. During first grade, this teacher uses a combination of trade books and text that she or the class generates. Every morning, for example, the whole class dictates the daily "newspaper," which includes the day, the date, the weather, and several personal contributions from individual children. Students and teacher read the newspaper aloud as a whole group and individual students are asked to find particular words (perhaps beginning with some specific consonant sound) or read individual sentences. Finally, an aide types the daily newspaper into a computer and produces copies for each student to take home and read to a parent.

Teachers' reliance on basal readers decreases somewhat across the grades, as shown by the second variable in Table IV-1, a rating by observers of the teachers' use of materials during three 2-week periods in the year. The pattern parallels what teachers reported on their logs. Still, the numbers bear out the basic pattern we have been describing: even in fifth-grade classes, teachers fell at the midpoint of the 4-point scale indicating their degree of reliance on basal readers.

Discrete Skills in Reading--Table IV-1 also gives an overview of the types of reading skills emphasized at the three grade levels. Not surprisingly, all types of reading mechanics skills receive less and less attention as students proceed through the grades. The logical interpretation of this pattern is that children have mastered decoding and acquired a substantial sight word vocabulary by the upper elementary years; therefore instruction in reading mechanics is no longer needed. Indeed, the planned structure of virtually all basal reading series--and particularly the literary readers--relies on this assumption. However, as the table also makes clear, there is no concomitant increase in attention at fifth grade to other aspects of reading instruction such as comprehension or literary genre and analysis of text. Further, some fifth-grade students in a number of the classrooms we visited quite obviously had not achieved mastery or fluency in reading. Some continued to receive drill and practice in reading mechanics through supplemental instruction or some type of grouping arrangement. Many others did not and were struggling with grade-level materials and content.

The Content of the Material Children Read--Overall, we did not find that what children read during reading instruction varied much across the districts in our sample. Given the same publisher, traditional and literary basals seemed to carry many parallel selections. The major variations between the two types of texts were in the types of pre- or post-reading activities emphasized; the literary readers offered teachers a planned structure for presenting reading, writing, listening, speaking, and thinking in an integrated fashion rather than as discrete skills.

There was, however, considerable variation in the content of reading at the classroom level both within and across districts that is masked by the aggregated data represented in Table IV-1. For example, a few teachers had completely or partially abandoned their former exclusive reliance on texts in favor of other types of reading materials--teacher-made text, text generated by children, novels, nonfiction works. In some of these situations, children were exposed to a much wider variety of reading experiences than the norm. For example, in one first-grade class, the teacher frequently used stories in a traditional basal reader as a jumping off point for reading other versions of the same tale or other literature with a similar theme.

Unfortunately, in some other classrooms, children rarely held a basal reader in their hands and had very little opportunity to read extended text of any kind. Particularly in situations where the curriculum is heavily test-driven, teachers feel compelled to spend the majority of reading instruction time on the skills that they know will appear on standardized tests. In operation, this can mean that children only read the very brief sentences or paragraphs on workbook pages or worksheets.

Who Teaches Reading/Language Arts

As Table IV-2 indicates, on average, students in the sample classrooms received reading instruction (or assistance with reading tasks) from more than one person. Configurations of personnel varied. In a very few classrooms (especially those with ESL students), the teacher had a full-time or nearly full-time aide. In others, an aide or another teacher came into the classroom or took groups of children out only for some portion of the scheduled reading/language arts period. (Patterns of supplemental instruction are described in more depth in Chapter VI.) Whatever the configuration, however, the striking result is that in this group of classrooms and on the average, the pupil/teacher ratio during reading instruction is considerably lower than we might have expected--13:1 in first grades and 15:1 at the other two levels, ratios that are somewhat lower than the corresponding figures for math. These data reflect both the high priority placed on reading and the fact that schools were deliberately selected because they served large numbers of disadvantaged children and therefore qualified for certain special categories of additional personnel.

On the average, expertise and experience do not appear to vary a great deal across the grade levels. Our sample included some very new teachers as well as some who were verging on retirement. Generally speaking, however, the classrooms were in the hands of teachers who were highly experienced at a particular grade level and with the types of students served by the school.

The index of extent of teacher background in language arts is derived from data based on interviews with the instructors. Study team members asked teachers about their preservice preparation and professional development experiences related to reading, writing, and related language arts. The maximum rating on this index is six. On the average, first- and third-grade teachers fall at about the midrange and fifth-grade teachers a little lower. Among the intensive classrooms, a little less than half (43%) of the teachers responsible for reading instruction held a master's degree, although not necessarily specifically in reading or language arts.

Table IV-2

WHO TEACHES READING/LANGUAGE ARTS IN THE REGULAR CLASSROOM, BY GRADE

	Grade		
	1 (n = 25)	3 (n = 22)	5 (n = 21)
Number and type of instructional staff			
▪ Average number of instructional staff in the room	1.9 staff	1.7 staff	1.7 staff
▪ Average pupil/teacher ratio for language arts	13:1	15:1	15:1
▪ Percent of classrooms in which teacher is assisted by--			
Another regular teacher	5%	10%	26%
An aide	59	45	29
Specialist or resource teacher	20	13	13
Parent volunteer	19	0	0
Expertise and experience			
▪ Average number of years teaching:			
This grade	9 yrs.	7 yrs.	7 yrs.
This type of student population	10	10	8
▪ Richness of background in language arts: Index scaled from 1 (least) to 6[a]	2.8	2.7	2.4
Attitudes			
▪ Satisfaction with teaching, scale value from 1 (least) to 4[b]	3.2	3.1	3.0
▪ Expectations for student success: scale value from 1 (most students won't be able to succeed) to 4 (all can succeed at grade level)[b]	2.7	3.1	2.7

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[a] Index summing up to 6 categories of professional development activity relevant to language arts--see Appendix A.

[b] Observer ratings of teacher satisfaction and expectations for student success--see Appendix A.

The last set of variables in Table IV-2--teacher attitudes about their chosen profession and the students that they teach--is also derived from observer data. On average, observers found that these teachers were moderately satisfied with their careers. The sample included a small number of teachers who were on the verge of leaving the profession; among these were some excellent instructors who were just plain tired out as well as a few who were unable to cope with classroom management issues. In general, the types of factors that kept many teachers from saying that they were very satisfied with teaching tended to be external to the teacher/pupil instructional relationship--excessive paperwork, too many meetings, too little support from parents, etc. Most continued to take pleasure in their actual interactions with children.

Finally, observers talked with teachers about their expectations for the children in their classes, particularly the lower-achieving students. On the average, this group of teachers believed that all students can succeed but that goals must be adjusted for low achievers; few believed that all could succeed at performing at grade level by the end of the year. They thus did not hold equivalent expectations for all students, even though a high proportion employed whole-group instruction and used the same materials with all children in the room.

How Reading Is Taught

Table IV-3 looks at some very basic variables that help describe how the teachers in this sample organize and orchestrate reading instruction in their classrooms. If there is one strategy that has dominated conventional wisdom in the teaching of reading, it is the fact of ability-based reading groups. For years, and particularly in the primary grades, teachers have made the task of teaching reading to a large group of children more manageable by breaking them into small groups of students reading at approximately the same level. The general term associated with this practice is "ability grouping," but that is somewhat misleading since group assignments under this system are actually made on the basis of achievement or mastery of previously taught material rather than any measure of innate ability.

Table IV-3

HOW READING IS TAUGHT: GENERIC INSTRUCTIONAL STRATEGIES, BY GRADE

	Grade		
	1 (n = 25)	3 (n = 22)	5 (n = 21)
Grouping: Percent of classes that regularly group students for reading--			
Homogeneously, by ability	75%	57%	44%
Heterogeneously to mix ability groups	9	24	24
Degree to which instruction is teacher-directed: Average score on a scale from 1 (= completely teacher-directed) to 5 (= completely student-directed)	1.7	1.8	2.0
What students do in class: Average percent of instructional days on which students--			
Read orally	42%	31%	23%
Read silently	20	27	32
Did seatwork	32	28	28
Listened to material read aloud	27	26	13
Had group/class discussion about what was read	35	37	33
Homework: Of all instructional days, percent on which reading-related homework was assigned	33%	15%	24%

In recent years, homogeneous grouping for reading instruction has come under increasing fire for a variety of reasons, but principally because of the perceived educational inequalities that it fosters. According to some research evidence, students in lower "ability" groups receive different content, have fewer opportunities to practice higher-order skills, get locked into a lower track at an early age, and may be stigmatized by the combination of within-class ability grouping and pullout models of supplemental instruction.

To combat these problems, many school districts (including the majority of those we visited) are encouraging or mandating different organizational arrangements for teaching reading--for example, whole-class instruction using the same materials for all students, heterogeneous cooperative groupings, and in-class supplemental, small-group assistance. Some of the precepts of the whole-language or integrated language arts movement foster this trend as well, recommending that teachers group children in many different ways as they read and reread stories--whole group, nonstatic small groups, pairing stronger and weaker readers, and so on.

Across all of our observed classrooms, the prevalence of paired (partner) reading and cooperative groupings as instructional strategies in reading is striking. Teachers seem to use these strategies as a means for providing variety during reading lessons. It is not clear from our observations that the deliberate pairing or grouping of better and poorer readers for specific reading-related activities particularly contributes to improved performance or self-confidence for struggling readers or a sense of group responsibility for better readers. However, it is clear that all students seem to enjoy the activities that take place in these configurations. This motivational factor by itself probably makes these practices worthwhile.

Despite district mandates and teacher interest in new or different configurations for reading instruction, Table IV-3 makes clear that the majority of teachers in the primary grades and nearly half of the fifth-grade teachers in our sample continue to find it desirable to group students by ability during some or all reading instruction. Sometimes this involves regrouping children from several classrooms for the express purpose of forming specific reading classes where all students are at the same stage of progress through a basal reading series. In other cases, teachers continue to form two or more reading groups within a heterogeneously assigned homeroom structure. Sometimes, even when homerooms or reading classes are homogeneously organized according to reading achievement levels, teachers find it useful to form either stable smaller groups based on students' work habits or motivation levels or ad hoc groups to work on particular skills. Generally speaking and based on our sample, few teachers believe that whole-class instruction using the same materials for all of the children all of the time can meet the reading instruction needs of individuals.

One school participating in the study uses an unusual grouping arrangement that has different reading groups starting and ending their school day at different times. "Morning readers" come to school an hour before "afternoon readers"; afternoon readers stay an hour after morning readers go home. These groupings are homogeneous and based on proficiency or achievement. During the main body of the school day, all children receive an additional hour or more of whole-class reading instruction. This schedule has the potential virtue of allowing teachers to focus all their attention on a smaller group of children for part of reading instruction.

On a 5-point scale ranging from "completely teacher-directed" to "completely student-directed," reading instruction in the sample classrooms is rated by observers as mostly teacher-directed, meaning that teachers plan, assign, and guide nearly all the reading activities in which students engage. Some kinds of reading activities vary by grade level. For example, first graders read orally nearly twice as often and listen to the teacher read over twice as often as fifth graders; fifth graders are more likely to be assigned silent reading than younger children. Other activities such as seatwork and group discussions appear to be employed quite evenly across all grades. As a group and on average, no single type of instructional approach dominates what goes on in these classrooms. However, the case studies of individual classrooms found considerable variation in, for instance, the amount and nature of seatwork assigned and the duration and quality of discussions about what was read. More description of such differences can be found in the second section of this chapter.

As in the case of mathematics, homework is relatively infrequent. The last variable in Table IV-3 indicates that in these classrooms, teachers assigned reading-related homework on no more than one-third of all instructional days. In interpreting these statistics, it is important to bear in mind one or two realities of normative behavior in elementary schools. First, there is a generally accepted rule that young children should only have homework in one--possibly two--subjects on any given night. On nights when no reading homework was assigned, there could be homework assigned in other subjects. Second, in contrast to their older and more jaded schoolmates, first graders often beg to be given homework, which may help explain some of the apparent differential in the frequency of reading homework assignments among the grade levels. However, based on our interview data, we also know that in some cases teachers have simply stopped assigning homework because students do not or will not do it. Teachers often hold parents responsible when they encounter homework completion problems with their students.

Instructional Strategies That Attempt to Maximize Understanding

In this section, we turn our attention to a more specific analysis of instructional strategies that teachers employ when the goal is to increase students' ability to read for meaning. One of the key issues for this study is the degree to which classrooms serving large proportions of poor children do, in fact, establish higher-order reading comprehension skills as a curricular priority. Often, what makes the teaching of reading problematic in schools serving the children of poverty is the pervasive belief about the necessity of teaching "the basics"--discrete reading mechanics skills--as a prerequisite to reading for meaning and understanding. For reasons that were discussed in the Introduction to this report and elsewhere (see Knapp & Turnbull, 1990), this may have a limiting effect on the learning of many children in the kinds of schools we are studying.

Drawing on variables derived from the teacher logs and quantitative data from classroom observations, Table IV-4 lays out five instructional strategies that can be used to distinguish groups of classrooms in terms of their emphasis on reading for meaning. Each strategy captures a different dimension of reading instruction. Teachers may use the strategies in combination (including all at once) as they attempt to teach their students to read.

The first strategy--maximizing the opportunity to read--is based on a simple premise: students learn to read well by actually reading text on a regular basis. One indicator of this dimension is obviously the number of minutes spent reading--in contrast to other activities such as seatwork or direct instruction that may also take place during the reading block. Another is observational data on the relative importance of oral and silent reading among a constellation of reading-related instructional activities that might take place on a given day. As Table IV-4 indicates, on the average, the students in the classrooms in our sample spent about a half hour per day reading text. There is relatively little variation in this figure across the three grade levels. Fewer than half of the classrooms at each grade level emphasized oral or silent reading on days when an observer was present.

Instructional strategies that encourage students to write about what they read represent another strategy that reportedly enhances reading comprehension. Indeed, this is one of the premises behind the supplementary materials, such as workbooks, that accompany the new literary readers. Instead of fill-in-the-blanks and other short answer exercises, these materials (if used properly) require children to compose sentences and paragraphs about reading selections. The act of composing itself causes the writer to mentally review what he knows or understands about the story. The approach also gives teachers a window on student misunderstandings or misinterpretations about the reading material. The classrooms in our sample appear to integrate reading and writing activities quite frequently (on over one-third of all instructional days)--and certainly more often than we would have predicted prior to data collection. This finding is likely related to the fact that a majority of districts in the sample have adopted the literary readers. We look at this strategy more closely later in the section.

Table IV-4

HOW READING IS TAUGHT: STRATEGIES AIMED AT MAXIMIZING UNDERSTANDING, BY GRADE

	Grade		
Instructional Strategies	1 (n = 25)	3 (n = 22)	5 (n = 21)
Maximizing the opportunity to read			
▪ Average minutes spent reading text	26 min.	31 min.	31 min.
▪ Percent of classrooms with instructional approach emphasizing oral or silent reading	42%	44%	45%
Integrating reading with writing			
▪ Of all instructional days, percent on which writing and reading were integrated	42%	35%	40%
Focusing on meaning and how to construct it			
▪ Instruction aimed at more than literal meaning: Percentage of classrooms that focused, during observation periods--			
Primary on understanding	46%	27%	43%
On a combination of understanding and literal meaning	38	50	48
▪ Explicit teaching of comprehension strategies: Average percent of observations	65%	66%	70%
De-emphasizing isolated discrete skills instruction			
▪ Degree to which skill teaching is embedded in teaching of reading: Average value on scale from 1 (= skills taught primarily out of context) to 3 (= skills taught primarily in context)	1.8	2.1	2.2
Providing opportunities to discuss reading and extend knowledge			
▪ Of all instructional days, average percent on which class or groups discussed what they were reading to explore its meaning	35%	37%	33%

A third strategy has to do with the degree to which instruction explicitly focuses on how to make sense out of written text. Although cognitive psychologists continue to debate the efficacy and transferability of direct instruction in higher-order thinking skills, reading specialists suggest that classroom teachers can help children improve their comprehension by (1) asking questions that probe deeper than the literal meaning of text and (2) by explicitly teaching or modeling the mental steps involved in particular aspects of reading comprehension, such as interpretation, prediction, or analysis of a situation. Observers were asked to classify the primary approach to reading instruction in a classroom in terms of its relative emphasis on accuracy (literal meaning) or understanding (interpretation), or a balanced combination of the two. At all three grade levels, the average scale value for intensively studied classrooms lies closest to a focus on understanding, with a scale value of 2. Observers also noted explicit teaching of comprehension strategies in the intensive classrooms about two-thirds of the time. However, this statistic includes workbook-oriented lessons on, for example, finding the main idea as well as instances of teachers actually modeling thought processes. These are qualitatively different approaches that likely have differential effects which we cannot yet tease out of our data.

A fourth strategy lies in the way discrete reading skills (e.g., decoding) are taught. Much of the reading research literature tends to present an emphasis on reading comprehension versus an emphasis on reading skills as dichotomous instructional approaches. While our sample of classrooms does represent just about the full range on a continuum from exclusive emphasis on reading for understanding to exclusive emphasis on the "reading" skills that are often so hard to separate from other types of language arts instruction (i.e., vocabulary development, reference skills, syllabification), the majority of teachers teach both reading for meaning and discrete skills. However, some teachers (especially those who are becoming skilled in an integrated approach to teaching all the language arts) find ways to teach skills, such as phonics, in the context of reading stories. Others continue to view skills work and "reading" as essentially divorced. By embedding the teaching of skills in context, it is argued, students are more likely to integrate skill learning into their developing ability to make sense out of text.

Although the range of average scale values is not great across the three grade levels, first-grade teachers appear to be somewhat more apt to teach reading skills out of context. This suggests that even in first-grade classrooms where teachers are moving into a whole-language or integrated language arts approach, some still find a need to work separately with beginning readers or nonreaders on the discrete skills that are the basis of decoding our language.

The final strategy for maximizing reading for understanding involves the opportunities that students have to talk about what they have read. The indicator for this strategy is drawn from the teacher logs and represents the frequency of group or class discussions to explore the meaning of what has been read. On average, students discuss reading selections with some or all of their classmates and their teacher on about one-third of all school days--or somewhat less often than they write about what they read. Once again, numbers such as these need the richer qualitative data to give them substance. The intensity of discussions, and therefore what they add to students' understanding of material read, can vary a great deal.

We turn now to a more in-depth look at the variation among classrooms in terms of opportunity to read, the integration of reading and writing, the relative focus on meaning and skills instruction, and opportunities to discuss what is read. Qualitative observational data from the intensive classrooms are used to describe or explain some of the variations suggested by statistics in the tables.

Maximizing Opportunity to Read

Although most children in this country spend approximately 6 hours per day, 5 days per week in classrooms where they presumably are engaged for most of the day in activities that involve reading, some children have much more opportunity than others to become immersed in reading. The time we have spent in classrooms for this study has made it clear that there is great variation in the depth and intensity with which students interact with the printed word. Some classrooms seem to offer students an abundance of opportunity to read all day, in all areas of the curriculum, with very skilled teachers taking every occasion to directly or subtly increase student facility in understanding and interpreting text. Others severely restrict student access to print, sometimes--but not always--for reasons that are largely beyond the control of the individual classroom teacher, such as fragmentation of the day and the curriculum.

Table IV-5 stratifies the classrooms in the sample on an opportunity-to-read variable that represents a weighting of the number of minutes that some or all students in a class actually spent reading silently or orally. Based on our observations, students in classrooms that fall in the low group, on the average, read text less than 10 minutes per day. The midrange classes averaged in the 10- to 25-minute range and the high classrooms over 25 minutes a day of direct student engagement with text. Classrooms representing the three grade levels are quite evenly distributed across the opportunity-to-read groupings; grade level thus does not appear to explain much of the variation.

Some readers may be astonished that in some classrooms, students read text less than 10 minutes per day. Of course the children in these classes do read, but most of the reading they do is related to seatwork assignments--workbook or worksheet pages emphasizing discrete skills outside the context of reading for meaning. One extreme example was as follows:

- The teacher in a combined fifth-/sixth-grade classroom rarely had her students (who read at their grade level) use the reading book at all. Nearly all reading instruction in this class focused on the discrete skills (word analysis, reference and study skills, identifying main ideas, etc.) that appeared on unit tests associated with the reading series. Students did workbook and worksheet assignments for perhaps 80-90% of reading instruction time--and passed their tests with flying colors. They did not, however, do any sustained reading on a regular basis.

Table IV-5

MAXIMIZING OPPORTUNITY TO READ:
PROFILE OF DIFFERENT GROUPS OF CLASSROOMS

	Opportunities to Read		
Characteristics of Instruction	Low (n = 8)	Mid (n = 30)	High (n = 30)
▪ Average minutes actually reading text	5 min.	18 min.	48 min.
▪ Average minutes allocated to reading instruction, overall	28 min.	44 min.	59 min.
▪ Instructional approach emphasizing oral or silent reading: Average percent of observation periods	40%	29%	58%
▪ What students do: Of all instructional days, the average percent on which students--			
Read orally	25%	32%	37%
Read silently	16	27	25
Listen to teacher or tape read aloud	29	20	26
▪ Percent of classes in which children choose all or some of what they read	67%	49%	69%

Table IV-5 indicates that, in addition to differences in the time devoted to reading extended text, classrooms in the three categories varied a good deal on the average total time allocated to reading instruction. This statistic includes all reading instruction time, excluding transitions and time taken up with management issues at the beginning or end of a reading block. Clearly, over a school year, some children are spending a great deal more time in reading instruction than other children.

The other variables in Table IV-5 do not show a clear relationship between the two time-on-reading measures and particular instructional approaches. In future analyses, we must explore other variables that may have more explanatory power. For example, the low-opportunity-to-read classrooms have a somewhat higher proportion, on average, of students from low-income families than the other two groups, and this may have some bearing on the instructional strategies that teachers use. Observers also found student engagement levels in the low-opportunity-to-read classrooms to be intermittent, in contrast with the moderately high engagement levels noted in both the other groups.

At this point in the study, the descriptions that we have from case studies offer the best explanations of how classrooms differ on this dimension. Many high-opportunity-to-read classrooms offer children an environment suffused with a literary richness. Regardless of their skill levels or personal backgrounds, students in these settings are surrounded by the written word, spend a great deal of time with books (of all types) in their hands, read or look at picturebooks when they should be doing something else, and generally seem to have assimilated the notion that reading is a desirable activity. In other classrooms--many in the mid-range group of Table IV-5, this richness is less evident, yet students still seem to read a great deal--either by choice or because of assignments.

The variance on this dimension is clearly not simply a matter of minutes allocated to reading instruction. Nor is it necessarily a function of institutionalized practices such as schoolwide Sustained Silent Reading period, which may, in some settings, be a genuinely productive time of the day, but, in others, is viewed as an intrusion or a waste of time. Based solely on observational data, there seems to be some correlation between opportunities to read and other factors--for example, classrooms where trade books are used as the content of instruction some or all of the time seem to offer students more overall opportunity to read as well. In the case studies, one strong correlate with opportunity to read seems to be regularly scheduled times when the teacher reads aloud and children listen. (Sometimes teachers do this as part of regular reading instruction. Several teachers in our intensive sample take their own turn during oral round-robin reading, modeling the pleasure that comes from reading well-written words with meaning and expression.) Yet the table above indicates that, across the entire sample, students in low-opportunity-to-read classrooms are slightly more likely to spend time listening to a teacher read. Anomalies such as these between quantitative and qualitative reporting of data remain to be ironed out in the second year of data collection and analysis.

The amount of time that children spend reading text can also vary at the student level. Individual children "catch on" to the concept of reading at different rates. Particularly in districts where whole-group instruction is emphasized, teachers worry about both the children who inevitably start to fall behind the pace and those who could go faster. The most typical responses to individual differences such as these are extra attention for the slower learners and enrichment for those who are ahead of the class. For example:

- In one first-grade classroom that falls in the high-opportunity-to-read group in Table IV-5, the lowest of three reading groups gets a "triple dose" of reading daily. They read the day's assignment first with an aide, then with the school's reading specialist. With this head start, they participate in the classroom teacher's presentation of the day's reading to the whole class. As a result of this extra reading instruction, the lowest reading group spends somewhat more time engaged with text and somewhat less than other children on writing and other language arts activities.

Coping with the different pacing needs of students does not always result in more time reading text for the slowest children, however, as the following case illustrates.

- In another first grade--this time one that falls in the midrange on opportunity to read, the teacher continues to rely principally on small-group instruction (three reading groups established on the basis of achievement), presenting the same content to each group in the sense that the groups use the same book. However, the instructional experiences of the groups varied a good deal. The "top" group always worked with the teacher first and for the longest amount of time. The middle reading group moved at a slower rate and did more word-by-word oral reading. According to the teacher, the lowest group was "complete frustration." They spent most of the time reading orally together because the material "was too hard for them to do silent reading."

There is some evidence from case studies of the intensively observed classrooms that students in split-grade classes (e.g., a room where half the children are third graders and half are in fourth grade) tend to have fewer opportunities to read text. For example, one combined first-/second-grade also had some ESL students at both grade levels. Although the teacher attempted to implement a whole-language/whole-group approach, she essentially had four reading groups with very different needs and skill levels. Trying to ensure that each group had adequate opportunity to work with her and engage with text became an extremely frustrating experience for the teacher. In another combined classroom--this time at the fifth-/sixth-grade level, the teacher was not given enough of the literature-based textbooks and accompanying trade books to go around. As a rule, her 33 students were rarely able to have a book to themselves and never were allowed to take books home. Obviously, the children's opportunities to read were severely curtailed in comparison with other situations.

Taking the intensively studied classrooms as a whole, in an overwhelming majority, what is read during formal reading instruction periods is selected by the teacher. This is true whether the reading matter is traditional basals, literary readers, novels, or workbook pages. In short, the content of reading instruction is largely planned and directed by the teacher. However, in most classrooms, there are also times in the day when children have some opportunities to choose what they read on their own. Typically, this occurs (1) during some official Sustained Silent Reading time or (2) when other assigned work has been completed. In some classrooms, observers noted that students seemed most engaged in their reading during these non-instructional moments. In others, although given opportunities to choose, children were unable to make productive use of these occasions.

Integrating Reading With Writing and Other Subjects

During the design phase of this study, the study team could not have predicted the frequency with which reading and writing activities would be related to each other in the sample classrooms. Based on conventional wisdom, our initial hypothesis was that little writing of any kind goes on in elementary school classrooms. In the majority of classrooms, that did not prove to be the case. Largely, we suspect, because of district adoption of the new literary readers and/or new curriculum and instruction guidelines emphasizing an integrated approach to language arts, many teachers routinely engage children in activities that require them to write about what they have read.

Table IV-6 stratifies the sample classrooms on the basis of the frequency with which reading and writing are integrated. For the group designated low, related reading and writing activities occurred on less than a quarter of all days in the school year. Classrooms in the high group reported integrated reading and writing on over half of all days. The midrange falls between 25% and 50% of instructional days. As the table indicates, the frequency with which students have the opportunity to write about what they read varies widely across the three groupings. If, as some research indicates, the integration of writing with reading helps children develop reading comprehension skills, then students in the high group classrooms may be gaining a significant edge on their peers who do less writing.

The second variable in Table IV-6 was originally created for use in the chapter on writing. It represents a more global measure of opportunity to write--not just writing activities that are related to reading. On this 3-point scale, 1 represents very little and 3 a great deal of writing. Although the differences are not great, there does appear to be a relationship between overall emphasis on writing and the degree to which reading and writing are used to complement each other. The third variable in the table (also borrowed from our analysis of writing activities) seems to be less useful in helping explain what happens in the high, mid, and low groups in terms of integrating reading and writing.

Observations in intensively studied classrooms gave us some insights on ways in which teachers use writing activities to reinforce or extend children's grasp of material that they are reading. For example:

- In one third-grade class, containing equal numbers of Anglo and Hispanic students, the entire morning--nearly 3 hours--is allocated to reading, writing, and language arts instruction. Although the teacher thinks of her use of this time in terms of a reading segment and a writing/language arts segment, all aspects of language instruction are organized around a literary reader and closely interrelated.

Table IV-6

INTEGRATING READING WITH WRITING AND OTHER SUBJECTS:
A PROFILE OF DIFFERENT GROUPS OF CLASSROOMS, BY GRADE

	Frequency With Which Reading and Writing Are Integrated		
Characteristics of Instruction	Low[a] (n = 8)	Mid[a] (n = 30)	High[a] (n = 30)
▪ Average percentage of instructional days on which reading is combined with:			
Writing	10%	36%	68%
Other subjects	29	45	52
▪ Degree of opportunity to write extended text: Average value on a scale from 1 (= very little) to 3 (= a great deal)	1.8	1.9	2.0

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[a] Low = Less than 25% of all instructional days; High = 50% or greater.

In fact, this teacher often finds ways to thematically coordinate nearly all the curricular areas she is responsible for teaching. During one reading unit based on the novel Charlotte's Web, students wrote poems about the story as well as factual papers about farm animals and spiders (related to science and social studies lessons).

- In a fifth-grade classroom where the reading curriculum includes some quite difficult novels, the teacher finds that having children write about what they have read facilitates comprehension. At one point in the year, students read two stories centering on the experiences of Black Americans during the Revolutionary War period. The teacher gave the class the following writing assignment in conjunction with their reading: *Write about what is not fair in this story. Is one character treated badly? Does one character have too many problems? Is your sense of what is just offended by events in this story? Tell about it.* At a later time, the students shared the results of their written efforts with each other. As she guided this group of preteens in the presentation of their own thoughts about the books to peers, the teacher simultaneously taught the class how to compliment and support each other in a group setting: "Think about the thing you heard that you like. You might get an idea from what I compliment. I'd like you to compliment each other." As individual children read their own words, the teacher found something encouraging to say to each before offering constructive criticism and suggestions for expansion or rewriting.

These teachers and some others whom we visited tended to create their own reading-related writing assignments. Most teachers who had children do substantial writing related to reading relied more heavily on the prepared exercises or suggested activities that accompanied their literary reading series. As we noted earlier in the chapter, publishers of these texts have restructured workbooks and worksheets to include many more occasions when students are asked to respond to questions or ideas about a reading selection in sentence or paragraph form. The source of ideas for reading-related writing assignments is less important, however, than the fact that the trend toward integration of reading and writing is so pronounced across the classrooms in the sample.

Focusing on Meaning and Deemphasizing Isolated Skills Instruction

As we indicated earlier, the skills-versus-meaning debate is largely a nonissue for the vast majority of teachers. They want their students to become "good" readers, by which they mean independent readers who can use the printed word for their own pleasure and to obtain information. Nevertheless, there are significant differences among classrooms--in practice if not in philosophy--in terms of the relative emphasis on activities or instructional approaches that might be expected to promote children's ability to read for understanding, as well as the degree to which skill instruction is "embedded" within the act of reading text.

Focus on meaning as an issue is especially relevant to a study on the academic instruction of disadvantaged children. In many classrooms, there is an obvious temptation to spend a great deal of time on teaching discrete reading skills when working with this segment of the student population, because so many of the "basic" language skills of Standard English are not part of their repertoire. But too much time on skills taught in isolation can only detract from time actually spent reading--that is, time putting all the skills to work to make meaning.

Table IV-7 clusters the sample classrooms into three groups--those with an "accuracy" focus (reading instruction aimed at the literal meaning of

Table IV-7

FOCUSING ON MEANING AND DEEMPHASIZING ISOLATED SKILLS INSTRUCTION: PROFILES OF DIFFERENT GROUPS OF CLASSROOMS

	Orientation of Reading Instruction		
Characteristics of Instruction	Towards Accuracy (n = 11)	Towards Understanding (n = 26)	Combination (n = 30)
▪ Explicit teaching of comprehension strategies: Average percent of observed classes	41%	70%	73%
▪ Degree to which reading mechanics skills are taught in a reading context: Average value on a scale from 1 (= skills taught primarily out of context) to 3 (= skills taught primarily in context)	1.5	1.9	2.3
▪ Frequency with which reading mechanics skills are taught: Average percent of all instructional days			
--Explicit phonics	21%	15%	11%
--Implicit phonics	18	26	18
--Whole-word recognition	30	48	44

text), an "understanding" focus (an instructional emphasis on comprehending and interpreting text), and a group in which both accuracy and understanding were emphasized. Observers found that in classrooms where reading instruction focuses on accuracy--that is, where teachers asked very literal questions about the content of a page or a story, or seatwork activities were highly factual in nature rather than inferential--there is also substantially less explicit teaching of comprehension strategies. Further, teachers who focus on accuracy tend to teach reading mechanics skills out of context (the embeddedness issue). Interestingly, the classrooms that used a combined approach emerge with the strongest meaning- oriented profile based on these two variables.

The last set of indicators in Table IV-7 come from the teacher logs and therefore are representative of what teachers in the groupings report that they did across an entire school year. That teachers who focus on accuracy also teach explicit phonics more often does not seem surprising. In general, this relatively small group of classrooms represents situations where traditional basal reading series (in contrast to the literary readers) were still in use and teachers principally relied on strategies that they had used for many years.

Teachers in the intensively studied classrooms varied a good deal in the attention they paid to teaching, reteaching, or reinforcing isolated, reading-related skills such as phonics. Phonics played very little role in the fifth-grade classrooms and occupied relatively little time in the third grades, although teachers at these levels continue to instruct or remind students about word attack skills, the meaning of prefixes and suffixes, and homonyms or homophones, for example. Some third and fifth graders in these classrooms are undoubtedly continuing to receive some phonics review in supplemental instruction classes.

According to the case studies, at the first-grade level, the importance of teaching phonics and other beginning reading skills is not a debatable point. Universally, the first-grade teachers said that the introduction to reading must combine and balance skills instruction with reading of real and meaningful material. Providing children with many opportunities to read also gives them many opportunities to apply and practice the discrete skills that they have been taught in other segments of instruction. For example, one first-grade teacher has a four-pronged philosophy of teaching literacy skills to young children:

(1) Make reading a value that children want to take on.

(2) Expose them to a lot of reading.

(3) Teach basic decoding skills.

(4) Give children an opportunity to manipulate words, to own them, through writing.

Based on our observations of their classrooms, we suspect that all of the first-grade teachers in the intensive sample would endorse these statements. This specific teacher spends about equal amounts of time on skill building and reading comprehension.

One of the issues that we have not probed enough in direct interviews with teachers is the intentionality behind the instructional strategies that caused observers to rate them as primarily accuracy or understanding oriented. In questioning students about what they have read, many teachers do rely on the questions formulated in teacher's editions of textbooks. There is some variety to the level of comprehension addressed by these questions. In addition to questions that draw attention to specific details of a reading passage, the publishers include items that encourage teachers to have children predict what will happen next, to put themselves in a character's shoes, to analyze character traits, and so on. If the question is there on the page, teachers will usually ask it. Some teachers seem to ask "higher-order" questions because they are there in the teacher's manual, without any particular awareness either that there is a qualitative difference among the questions posed or that the strategies students might have to call on to answer predictive or analytic questions are any different from the skills needed to locate a phrase in the text. Others (but not many) very consciously and deliberately pose a range of questions and activities and can talk articulately about why they do so.

Providing Opportunities to Discuss Reading and Extend Knowledge

We use this heading to look at a group of instructional strategies and activities that allow teacher/student or student/student verbal interactions about topics related to reading. Some observers of elementary school education speculate that talking--like writing--may be an important ingredient in any formula to improve the reading capabilities of disadvantaged children.

Table IV-8 places the sample classrooms into three groups based on teacher-reported data about the proportion of school days on which class discussions about reading material were held. The low group reported such

Table IV-8

PROVIDING OPPORTUNITIES TO DISCUSS READING AND EXTEND KNOWLEDGE: PROFILES OF DIFFERENT CLASSROOM GROUPS, BY GRADE

	Frequency With Which Classes/Groups Discuss What They Read		
Characteristics of Instruction	Low[a] (n = 25)	Medium[a] (n = 27)	High[a] (n = 16)
▪ Of all instructional days, average percent on which classes/groups discuss what they read	12	37	69
▪ Giving context for reading through class discussion about reading topic: Average percent of observed classes	36	42	54
▪ Connecting reading to students' backgrounds or lives through class discussion of personal meaning of what was read: Average percent of observed classes	12	17	39
▪ Student-student discussion--Students encouraged or permitted to discuss with each other what they read: Average percent of observed classes	31	24	31

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[a] Low = Less than 20% of all instructional days; High = 50% or more.

discussion on less than 20% of instructional days. In the high groups of classrooms, discussion occurred over 50% of the time.

In the best of all possible worlds, we might envision many classrooms where teachers and students together read good literature and pursue extended discussions of meaning and interpretation of text. In fact, among our case studies, we have a few examples of highly stimulating student/teacher discussions about reading selections--either to set the context before reading begins or to analyze what was read. The table, however, suggests that discussion is a low priority in a large number of classrooms. In 25 classrooms--over a third of those for whom we had usable data on these variables--students discussed what they were reading, on the average, only 12% of the days that they attended school--not even once per week.

According to our observations, teachers do slightly better in terms of providing children with a context for reading. Usually this means offering some background information related to the setting or situation that students will meet in a story. Sometimes, but not as often, it can also mean questioning children to learn previous knowledge they have about the topic. Observers reported that, across the three categories of classrooms represented in Table IV-8, teachers engaged students in this type of preparation for reading about one-third to one-half of the time.

Another possible correlate with the amount of teacher/student discussion is greater "personalization" of instruction through explicitly drawing attention to the parallels between real lives and literary lives. As the third variable in the table indicates, this is not a frequently used strategy in our sample of classrooms, although in classrooms with a high degree of discussion, connections between reading and students' lives are made nearly 40% of the time, or 2 days per week, on average. In theory, increased discussion time would allow teachers to build on and expand students' backgrounds and experiences. We did observe a number of occasions when teachers explicitly drew students' attention to aspects of a story that might relate to real events or experiences in their lives. However, we saw few instances where a teacher capitalized on students' cultural background knowledge to enhance learning. Student-student discussion is somewhat more common, but does not appear to explain any of the differences between the groupings around which the table is organized.

As in the dimension that places meaning and skills at polar ends of a spectrum, discourse vs. no discourse is conceptually too restrictive a framework to be of much use in describing what happens in elementary school classrooms. Much of what goes on during teacher/student interactions in reading is in a rapid-fire question-and-answer format that anyone would be hard pressed to define as "discourse." Yet children seem to enjoy it and it allows teachers to form some judgments about how well students are understanding what they read. In fact, even in classrooms where virtually no real discussion goes on, the times when teacher and pupils interact instructionally in any way--even direct instruction on rather tedious skills--seems to engender exceptionally high student engagement.

We were fortunate to observe in several classrooms where teachers believed in the importance of class discussions and thus have a sense of the possible power of this tool for helping children augment their understanding of an author's meaning. The context for such discussions was as either a pre-reading or a post-reading activity--or both.

Use of discussion seems to bear little relationship to whether a teacher's basic approach to reading instruction is traditional or innovative in some way. For example:

- In a classroom organized in conventional ability-based reading groups, a traditional basal reader, lots of worksheets, and little integration of reading and writing, the teacher nevertheless talks a great deal with the students. Her particular technique for engaging student interest in reading and helping children understand what they read is through analogies. Thus, over the course of the school year, the observer in her classroom noted reading-related discussion that drew on, among others, movie director Spike Lee's film, "Do the Right Thing," the film "Star Wars," and television wrestling. This teacher also tends to take advantage of the "teachable moment" to impart a little added fact or observation that she thinks may intrigue her students.

- In another classroom, the teacher frequently engaged his first-grade students in extended discussion related to stories in their literary basal reader. As they reviewed a folktale called "Bringing the Rain to Kapiti Plain," in which a mythical archer ends a drought by shooting a hole in the clouds, the teacher asked the children how they thought clouds were formed. All answers were accepted and written on the board, including these: "A cloud melted." "God's crying." "The water jumped from the earth up to the clouds." This discussion eventually turned into a science lesson on the water cycle, culminating in an experiment involving boiling water, a tray of ice, and condensed steam "raining" down on the heads of the delighted children.

In interpreting what we observed, we did not attempt to attach any specific time limits to the term "extended discussion." Some meaningful interactions between teacher and students were very brief. For instance, in a first-grade class where all the children were bilingual, the teacher prepared the students for a picturebook about autumn by asking what they knew about this season of the year. When it became clear that their background knowledge was limited (leaves fall off the trees, birds fly to Mexico), she moved directly into sharing with them the beautifully illustrated pages in a picturebook, talking about each page in depth. This teacher realized that there was little point in pursuing the originally intended discussion in the absence of information. At the end of the session, the students were able to generate a list of 18 words related to autumn. Later, each dictated an autumn story to a fifth-grade "buddy."

In the hands of a teacher who is not terribly comfortable with relatively unstructured give-and-take between instructor and student, however, a discussion segment of a lesson can backfire. For example:

- One teacher in our sample was trying very hard to follow the approach described in the teacher's manual of her new literature-based reading series. One activity called for her to read some phrases and allow the class to discuss the images evoked by these words: girl looking out the window; cat dreaming; Christmas tree. One child said, "I saw some homeless people sitting on a mattress and the snow was falling down and keeping them warm." For him, the words elicited the winter season and something from his own experience--seemingly an appropriate response to an open-ended type of activity. The teacher, however, chastised the student for not listening well and admonished him to "form a picture based on what I say; do not add anything." This response, of course, squelched both the individual child and the spontaneity of the overall interaction.

The Search for a Typology of Reading Classrooms

Unlike mathematics or writing, the sample classrooms do not sort out neatly into types based on the strategies or other instructional variables we have examined so far. In part, this may reflect the complexity of what is being taught, the larger proportion of the day allocated to it, and the range of instructional approaches used to teach it. At present, the sample of classrooms can be sorted into different types depending on the strategy or dimension being considered, as the preceding analysis demonstrates. Nonetheless, in second-year data collection and analysis for the final report, we will pursue the matter further, to see if some overarching clustering of classrooms makes sense, and ultimately, to determine whether this clustering is associated with reading outcomes.

V WRITING

In the typical school serving the children of poverty, writing is considered less important than reading, or too difficult for children who lack "basic" language skills, or both. As a consequence, in the early grades especially, writing tends to be given less time and attention.

In our sample of classrooms, wide variation exists in approach to writing curriculum and instruction. This variation enables us to examine a number of questions about the factors that distinguish classrooms one from another, the forces that drive teachers to adopt one approach or another, and the relative efficacy of approaches to enhancing the writing proficiency of children.

When considering what is available to children from poor families, our investigation takes on special importance in at least three ways. First, whether one believes that writing is primarily a vehicle for self-understanding or a tool for learning, many in this population of students will have little opportunity outside of school to experience the various facets of writing. Therefore, the opportunities provided in the classroom are crucial to the development of students' writing competence.

Second, conventional wisdom argues that because disadvantaged students have typically not learned all the rules of standard English syntax and grammar, classroom writing instruction needs to emphasize these skills. (In fact, these children have acquired a consistent set of syntactical rules, but often for a dialect or language that is different from standard English.) In this study, we address this issue, looking at the role of component skills instruction in the writing opportunities provided students and whether an emphasis on skills instruction is related to students' writing competence. Even teachers who approach the teaching of writing in ways other than emphasizing component skills may experience the conflict between encouraging fluency and teaching for correctness. This study attempts to depict ways in which teachers of writing resolve this conflict when working with at-risk students.

Third, research on the writing process has shown that the writer's background knowledge is crucial to the writing process. Thus, it would seem that writing tasks promoting the meaningful use of language will draw upon students' cultural and linguistic backgrounds. But in schools serving large numbers of poor children, students' backgrounds and experiences are not always used as the basis of in-school writing. We will attempt to understand how teachers can make better use of their students' experiential resources.

Overview of Writing Instruction Across Grades and Across the School Year

We first describe the writing instruction in the sample classrooms--what is taught in writing, who teaches writing, and how writing is taught. The data presented in this section are taken from the teacher logs that the teachers completed each day and the observer coding forms that the observers completed after each of the unit visits.

What Is Taught in Writing Across the Year

Table V-1 shows that, for classrooms in the sample, the mean percent of all writing tasks that require extended writing increases as the children go up in the grades. These figures indicate that the majority of writing tasks assigned to first-grade children are restricted kinds of writing (e.g., worksheets or fill-in-the-blanks, or copying). However, because the first-grade children are typically given a larger number of writing assignments, they may do more tasks requiring extended writing than do fifth-grade children. For fifth-grade students, the reverse is true. This difference may be a result of the emphasis on basic skills (and the necessary worksheets) that is present in the curriculum of many first-grades even though many first-grade teachers are attempting to incorporate extended writing into their language arts curriculum.

Table V-1

WHAT IS TAUGHT IN WRITING ACROSS THE SCHOOL YEAR, BY GRADE

Characteristics of Writing Curriculum	Grade 1 (n = 19)	 3 (n = 24)	 5 (n = 20)
Focus on Writing Processes: Of all instructional days, average percent in which each writing stage is a focus of instruction--			
▪ Prewriting	36%	26%	20%
▪ Drafting text	34	29	49
▪ Revising	8	8	11
▪ Editing	9	9	10
Focus on Extended Text Writing:			
▪ Average number of extended text tasks during 2-week observed periods	5 tasks	4 tasks	3 tasks
▪ Of all writing tasks during observation period, average percent that involved extended text	43%	49%	57%
Genre: Of all instructional days, average percentage on which writing tasks involved each genre--			
▪ Essay (persuasive or analytic writing)	3%	2%	12%
▪ Other informative writing	12	15	23
▪ Imaginative writing	18	19	24
▪ Personal writing	31	20	38
Audience for Writing: Of all instructional days, average percentage on which students wrote for--			
▪ Teacher as evaluative audience	16%	13%	15%
▪ Teacher as nonevaluative audience	20	16	16
▪ Other students	13	11	11
▪ Outsiders	7	4	3
Types of Language Mechanics Skills: Of all instructional days, average percentage that focused on--			
▪ Handwriting	40%	46%	23%
▪ Spelling	43	69	66
▪ Punctuation/capitalization	31	25	10
▪ Sentence structure	29	31	30
▪ Parts of speech	16	21	16

The numbers shown in Table V-1 indicate that time spent on the different stages of the writing process varies as a function of grade. This is, at the first grade, emphasis on the prewriting stage occurred for a greater percent of the instructional days than for the third and fifth grades. At the fifth grade, however, drafting text occurred a greater percent of the instructional days than for the first and third grades. Those figures indicate that first-grade teachers seem to believe that they need to devote more time to preparing their students for the writing task, while fifth-grade teachers spend less time in preparing their students in the writing task and more time in the actual drafting of text. These numbers are consistent with the qualitative data, which revealed that first-grade teachers, for the most part, spent a significant amount of time in prewriting kinds of activities and discussions. First-grade teachers frequently devote an entire language arts lesson to a prewriting kind of activity, such as reading a book or talking about a particular holiday or upcoming event.

Few differences are found across grade levels in terms of the revising and editing stages. Across all grade levels, significantly less instructional days are devoted to these two stages. These two stages seem to be the most difficult for teachers to implement in their classrooms. Although teachers are assigning a greater number of extended writing tasks, students are given little opportunity to edit and revise their original text.

The emphasis on various language mechanics skills also varies as a function of grade level. Handwriting is given the greatest emphasis at the third-grade level--the grade when most students are expected to show competence in cursive writing. Emphasis on parts of speech was the one skill that is fairly consistent across grade levels: most language arts curricula present parts of speech in increasing levels of complexity, starting with simple nouns in the first grade and progressing to adverbs, participles, and prepositions in the intermediate grades. Thus, it appears that even though the complexity of the subject varies, teachers, across grade levels, tend to devote the same amount of time to the topic.

Emphasis on punctuation decreases as the children go up in the grades. First-grade teachers emphasized punctuation over 30% of the instructional days, as compared with fifth-grade teachers, who taught punctuation about 20% of the time. A similar pattern is shown for emphasis on sentence structure. Spelling appears to be given great emphasis across all grade levels, especially at the third- and fifth-grade levels. The smaller mean at the first-grade level is consistent with the quantitative data that revealed that several first-grade teachers gave greater emphasis to fluency than to correctness.

The data on the audience for writing reveal greater variance within grades than across grades. The means indicate that the teacher is the most frequently designated audience for children's writing--either teacher as evaluator or not as evaluator.

The data on genre indicate that the greatest differences in frequency of assigning these four types of genre are found for essay and other informative writing. Over 35% of all fifth-grade writing assignments are of one of these two kinds of writing. Personal writing, e.g., journal writing, shows small across-grade differences. This finding is consistent with the qualitative data, which reveal that many first-grade teachers have their students write in personal journals.

Who Teaches Writing

Because we collected data on instructional staff in "language arts" and mathematics, there is no difference between teachers of reading and writing. The information that appears in Chapter IV regarding "Who Teaches Reading" thus describes the nature and type of instructional staff in writing classes, the extent of their expertise and experience, and their attitudes about teaching and students.

How Writing Is Taught

Table V-2 presents data on the kinds of generic (as opposed to writing-specific) instructional strategies that were used in the teaching of writing in the sample classrooms.

The data indicate a greater within-grade variance in terms of the use of grouping patterns than across-grade variance. Looking only at the mean percents, it appears that first-grade classes show a greater use of homogeneous grouping than do either third- or fifth-grade classes. This difference may be a result of the traditional homogeneous reading groups that have been an important practice in reading instruction at the first-grade level. Perhaps first-grade teachers transfer this practice when teaching some aspects of writing. Fifth-grade classrooms make greater use of heterogeneous groups--a number equal to that of the mean percent for first-grade classrooms. Thus, it appears that first- and third-grade classrooms use more grouping than did fifth-grade classrooms; however, for third- and fifth-grade classrooms there is a tendency to use heterogeneous groups more than homogeneous groups. In the first-grade classrooms the two types of grouping patterns are used about equally.

When looking at the data about the kinds of activities students are given for writing instruction, few across-grade differences appear (however, as with much of these data, there are large within-grade differences). One apparent pattern across grade levels is the decline in activities involving copying notes, letters, or taking dictation. A greater percent of this kind of activity occurs at the first-grade level and the percent of that activity decreases as the students go up in grade level. The activity "generate ideas for writing" also shows a similar pattern. This finding is consistent with data presented in Table V-1 concerning emphasis on the writing process. Data presented in that table showed a greater emphasis on prewriting kinds of activities ("generating ideas" is typically a prewriting activity). Thus, we have two sources that indicate that first-grade teachers tend to place greater emphasis on helping their students prepare for the writing task than do third- and fifth-grade teachers.

Table V-2

HOW WRITING IS TAUGHT: GENERIC INSTRUCTIONAL STRATEGIES, BY GRADE

	Grade		
Instructional Strategies	1 (n = 19)	3 (n = 24)	5 (n = 20)
Grouping: Percent of classes that regularly group students for writing			
▪ Homogeneously by ability	33%	20%	10%
▪ Heterogenously to mix ability levels	33	60	35
What Students Do in Class: Of all instructional days, the average percentage in which students--			
▪ Generate ideas for writing	30%	19%	20%
▪ Work on their own writing	53	38	54
▪ Do written exercises in workbook	36	35	35
▪ Copy notes, letters; take dictation	18	13	17
▪ Give feedback to other children about their writing	15	8	16
▪ Do oral exercises or drill (e.g., to practice self-expression skills)	30	24	26
Teacher/Student-directedness: Degree to which students are encouraged or required to direct their own learning (average scale value, from 1 (= completely teacher-directed) to 5 (= completely student-directed)	2.6	2.6	2.9
Homework: Of all instructional days, average percent on which homework was assigned or pending related to--			
▪ Writing (composed) text	4%	5%	13%
▪ Language mechanics	10	24	24

Across grade levels, teachers are consistent in terms of the degree to which they encourage or permit their students to direct their own learning. Given that this is a 5-point scale (1 indicating instruction that is entirely teacher-directed), these data suggest that teachers in the study sample tend to be relatively directive in setting up classroom writing tasks, and children have little choice.

The table indicates several things about homework patterns: first, that the frequency of writing-related homework is generally low, lower than for reading and mathematics, in fact; and second, that students are much more likely to get homework related to language mechanics than to writing text itself. In addition, there are some differences across grades. Homework assignments requiring extended writing or language mechanics are more likely in fifth-grade classrooms than in first- and third-grade classrooms. This is interesting in light of the finding that first-grade students tended to have a higher percent of extended writing tasks than did fifth-grade students. It may be that fifth-grade teachers tend to assign more out-of-class extended writing tasks than in-class writing tasks.

Strategies Intended to Maximize Meaningful Written Communication

As in the case of mathematics and reading, a series of strategies exist that collectively emphasize meaningful written communication. Each strategy reflects a key underlying dimension of writing instruction and serves as a useful tool for distinguishing differences among the classrooms we are studying. Our analysis concentrates on five strategies that, based on the research literature and our own field work, appear to have an important role to play in the teaching of writing to the children of poverty:

(1) Maximizing opportunities for students to write extended text.

(2) Integrating writing with other areas of the curriculum.

(3) Deemphasizing mastery of component skills or mechanical correctness as the primary aim of writing instruction.

(4) Teaching the process of writing.

(5) Changing the social context of the writing task.

While independent of one another in one sense, the five strategies are interrelated in many ways, as subsequent analyses will show. But, first, we discuss each strategy and the dimension that underlies it.

Maximizing Opportunities for Extended Text Writing

The first strategy rests on a simple premise, that parallels the strategy of maximizing students' opportunity to read text: given more chances to compose text requiring some complex thought, students are more likely to become proficient writers.

To classify the complexity of the writing tasks assigned in the study classrooms, we use three categories of text: (a) noncomposed, (b) composed-restricted, and (c) composed-extended. The three differ from each other chiefly in terms of the complexity of written expression demanded of the child. Noncomposed text refers to writing requiring no thought about the process of composing. Activities such as copying text, writing dictated text, and single-word exercises are classified as noncomposed text. Composed-restricted text requires the student to compose a short piece of writing that has a well-defined length, brief in nature, such as assignments requiring the writer to compose a phrase or sentence containing one of the week's spelling words. Composed-extended text requires the writer to compose text that does not have a well-defined or predetermined length (although the teacher may require a certain number of words, sentences, or pages) and that elicits an elaborated thought in written form. Book reports, journal writing, a story, a letter, or a poem would all be classified as composed-extended text.

Classes in the sample vary greatly on this dimension. In some classrooms, even though a significant amount of time is devoted to writing, very little of this time is used to write extended text. In these classes, students write answers on exercise sheets, spelling words, or sentences dictated by the teacher. Classrooms on the other end of the continuum provide many opportunities for students to write extended text. In one classroom, for example, extended writing is an important part of all instruction. Writing occurs throughout the day--during reading, social studies, and science. Students write in their journals for 20 minutes every day and write book reports of the books they read during silent reading.

When complex writing tasks are assigned on a regular basis, students do write a large amount of extended text. Like all children, this population of students stand to gain a great deal from such classroom writing experiences.

Integrating Writing with Other Areas of the Curriculum

A second strategy promotes writing as a useful communicative tool by integrating writing into the instruction of other subject areas, such as reading, social studies, science, and mathematics. Across the sample, there are many classrooms where writing and reading are integrated--students write about what they read and read what they write. In a few classrooms, writing is an important part of the social studies and science instruction, but we have virtually no cases in which writing is used during mathematics instruction. In some classrooms, writing may be taught as a unique subject and no extended composing occurs in the subject areas. Thus, a variety of configurations exist in terms of the degree to which writing is integrated across the curriculum.

Integration of writing is related to the previous strategy (maximizing the amount of extended text writing) in one sense. When writing becomes a part of more than one subject area, the frequency of writing is likely to increase; there is also a likelihood that writing about what has been read or what is being studied in social studies will involve extended text, although there is no guarantee of this happening.

In some classrooms, reading and writing are completely integrated with little distinction made between these two elements of literacy. In one of these classrooms, students write summaries of all the trade book stories they read. In addition, the teacher would select themes from the stories they read, e.g., justice, villains, certain emotions, and have the students write on these themes. The students then read these themes to each other.

This strategy is especially important for disadvantaged students because of its focus on the meaningful use of language. Writing that is included in the instruction of other subject areas conveys to the student the various uses of writing and its importance in a literate society. When writing is integrated across the curriculum, it is not presented as an isolated skill, but as a vehicle for learning, persuading, reporting, and presenting points of view. For the most part, writing instruction unrelated to specific content areas is usually for self-expression or description. Although these are important aspects of writing, students' awareness of the full range of uses for writing may be expanded as opportunities for using writing occur throughout the curriculum. This issue does, of course, apply also to children who are not considered disadvantaged. However, for this study, it is crucial that we understand the kinds of opportunities given to at-risk students that facilitate their appreciation of the meaningful use of language because they are so often taught writing as a set of discrete language skills.

Deemphasizing Component Skills and Correctness

This strategy identifies the degree of emphasis placed on discrete language skills (punctuation, sentence structure, spelling, etc.) and the correctness of written text. Both in our conception and across the sample classrooms, teachers can be sorted into those who (1) place minimum emphasis on correctness and devote little time to teaching component skills; (2) emphasize correctness and component skills, but as they are encountered in students' written text; and (3) concentrate on teaching component skills out of context of the students' writing.

Like its counterpart in the preceding chapter on reading, this strategy reflects one of the major concerns of this study--the relative importance of discrete skills taught in isolation from the holistic activity (writing) to which the skills apply. Many educators seem to assume that students from poor backgrounds will develop greater writing competence if they are taught the mechanical skills of writing first and if their writing opportunities are designed to make sure that these skills are correctly applied, which runs counter to research suggesting that students tend not to benefit from such instruction (Hillocks, 1986). This discrepancy between empirical evidence and conventional wisdom is probably one of the most enduring conflicts in the field of literacy. In this study, we hope to help resolve this conflict.

In sample classrooms where a high degree of emphasis is placed on correctness and component skills, students tend to have little opportunity to write extended text. In one third-grade classroom, the teacher believes that the language arts textbook is too difficult for her students. Thus, the textbook (with extended writing assignments) is not used and no extended writing occurs. The teacher believes that her students need training in the component skills, and writing assignments consist of grammar exercises and spelling for about 20 minutes each day. On the other hand, in another third-grade classroom, the teacher places little emphasis on component skills and students write extended text for at least 30 minutes each day.

Teaching the Process of Writing

A fourth strategy aims at giving students better communicative tools by teaching the different phases of the writing process--prewriting, drafting, editing, and revising--and by helping students to see writing as a multiphase process.

Prewriting is of special interest in this study. Judging from the sample classrooms, this phase of writing seems to offer numerous ways for teachers to draw upon students' backgrounds and experiences. Some teachers in the sample do so, and thereby ensure that students have a source of knowledge that is useful for certain assignments. Other teachers who devote considerable time to prewriting use it as an opportunity to provide students with new information or experiences which they are unlikely to encounter outside of schools and which the students can then use in their writing assignments. While both types of prewriting have important and different roles to play in preparing students for writing, the former acknowledges that students come to school with useful and valued experiences, while the latter presumes that students lack knowledge necessary for writing, and may unintentionally communicate a lack of value or recognition for their background. We are particularly interested in exploring the most effective balance of approaches to prewriting, in addition to the overall value of prewriting in enhancing the writing competence of this segment of the student population.

The degree to which teachers allow students opportunities for revisions and how these opportunities are carried out is also of interest to us. In one fifth-grade classroom, for example, students work with partners and give each other suggestions for revising a particular piece of writing. By mid-year, this activity was an established routine in the classroom, and students know that for all extended writing assignments, their partners will help them with their assignments before they are given to the teacher. This kind of routine differs greatly from a classroom where students turn in their writing assignments for evaluation by the teacher with little or no opportunity for revisions.

Changing the Social Context of the Writing Task

A final strategy involves the attempt to construct a social context for writing that motivates and encourages communication with others. The relationships between writers and peers, the teacher, or other audiences are crucial elements of this social context. Accordingly, we have paid attention to these dimensions of the social context--peer interaction during writing, the degree of student direction in instruction, and the degree to which students write for audiences other than the teacher-as-evaluator--in an effort to understand how the social environment may facilitate or inhibit students' writing.

One scholarly view (Dyson, 1989) argues that children write for each other and that interactions among them during the writing task are crucial to the development of literacy. As a consequence, we not only paid attention to whether children are encouraged or permitted to talk to one another during their writing, but what they talk about. For example, do they read their writing to each other? Do they communicate ideas and help each other elaborate on their ideas? Do they ask each other technical kinds of questions? In general, we hoped to understand how much, and how, children worked together on their writing tasks.

Related to the social environment created for the children is the degree of control maintained by the teacher over the writing task. Alternative approaches to writing instruction encourage more choice by the student and a greater degree of student direction in doing writing assignments. Traditional classrooms, in which instruction is highly teacher-controlled, allow little room for students to choose or shape their writing tasks, as in cases in which the writing task requires students to follow a pattern when writing a sentence. For example, after reading the story "Just Like Daddy," one first-grade teacher instructed the students to write a sentence using the following pattern, "I ____________ just like __________." This kind of task contrasts with those that allow more room for students to determine the content and even the form of expression, as in another first-grade classroom in which the teacher devoted considerable time to a prewriting activity that stimulates students' thinking about what they see in the spring, followed by an activity in which students draw a picture of Spring and then write about their picture. Between these two extremes lies a range of environments that surrounds the students' efforts with varying degrees of "scaffolding"--support by the teacher that structures and simplifies or guides the writing.

The audience for students' written work may also have a key role in encouraging writing as meaningful communication. We define audience as the person(s) to whom the product of a writing task is addressed, either explicitly (as in a letter, memo, or other form of targeted writing) or implicitly. The concept of audience is of concern because so much of the writing that occurs in school has the same audience--the teacher, who also serves as evaluator. Writing text for an audience that will also serve as an evaluator can add to children's anxiety about writing and mitigate the development of their writing competence, especially among students who are not particularly secure about their ability to write. Alternative approaches to writing instruction encourage writing for a variety of audiences, none of whom acts in an evaluative capacity.

Several examples from sample classrooms display alterations in the social environment that appear to encourage more meaningful communication:

- In one first-grade classroom, students write daily in their journals and are allowed to talk to each other during their writing time. During our observations, we saw students reading their journal entries to their peers, who, in turn, frequently asked some questions related to the content of the entries. These interactions gave the first-grade students opportunities to read aloud their entries and to add to what they had written. Journal time was considered a social time, with all students sharing their ideas.
- In a fifth-grade classroom, the teacher allowed the class to select the writing topic from a list provided by the teacher. During this selection process, students were allowed to call out their preferences and reasons. These discussion periods seemed to increase the students' interest in the topics and to get them thinking about what they would write.

This dimension is especially important when looking at the writing opportunities provided disadvantaged students. As in the case of component skills teaching, conventional wisdom argues that such students need a high degree of "structure"--that is, clear rules about the task, a structure for carrying out the assignment, and clearly specified criteria for evaluation. When teachers structure their writing lessons in accordance with this view, they tend to create a social environment for writing that precludes student-student interaction and student choice, and deprives students of some responsibility for communication. This kind of environment may work against the acquisition of writing competence among this segment of the student population.

Differences in Strategies Across Grades

The five strategies just discussed can be summarized in quantitative terms, as shown in Table V-3 below. As the breakout by grade within the table reveals, there are few major differences across grades within our

Table V-3

HOW WRITING IS TAUGHT: STRATEGIES THAT MAXIMIZE MEANINGFUL COMMUNICATION, BY GRADE

	Grade		
Instructional Strategies	1 (n = 19)	3 (n = 24)	5 (n = 20)
Maximizing the Amount of Extended Text Writing			
▪ Average minutes/day students actually write	20 min.	21 min.	26 min.
▪ Average number of extended text tasks during 2-week observation periods	5 tasks	4 tasks	3 tasks
▪ Of all writing tasks during observation periods, average percent that involved extended text	45%	49%	56%
Integrating Writing with Reading and Other Subjects: Of all instructional days, average percent on which writing instruction was integrated with--			
- Reading	42%	35%	39%
- Other subjects	34	20	30
Learning Writing Process Skills: Degree of attention paid to writing process: scale derived from teacher log--from 1 (= little prewriting, virtually no revision) to 3 (= extensive prewriting, frequent revision)[a]	2.0	2.2	2.1
Focusing on Meaningful Communication vs. Correct Mechanics			
▪ Emphasis on correct mechanics during observation periods: average scale from 1 (= greater emphasis on correct mechanics) to 3 (= greater emphasis on meaningful communication)	2.0	2.2	2.0
▪ Embeddedness of language mechanics within instruction during observation periods from 1 (= skills taught primarily out of context) to 3 (= skills taught primarily in context)	1.7	1.6	1.7
▪ Connecting writing to students' backgrounds	79%	48%	62%
Encouraging Student-Student Interaction: Average percent of observed lessons in which student-student interaction was permitted or encouraged during writing instruction	69%	48%	49%

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[a] See Appendix A.

sample. However, there are some exceptions. First-grade classrooms in the sample were more likely than their counterparts in higher grades to connect writing tasks to students' backgrounds and to encourage or permit student-student interaction during writing lessons. Older students in the sample wrote longer on average, although they typically had fewer tasks involving extended writing (these assignments were generally more substantial than what first graders were asked to do). Otherwise, the measures indicate that varied approaches to writing curriculum and instruction are reasonably well distributed across grades.

Types of Writing Classrooms

The first of the five strategies--maximizing opportunities for extended text writing tasks--provides a convenient way of classifying classrooms. As our subsequent discussion will demonstrate, other dimensions of writing instruction cluster in such a way that each type of classroom exhibits a characteristic combination of the five strategies. Thus, for example, we found that in those classrooms where students have relatively frequent opportunities to compose extended text, teachers also tend to integrate writing into the curriculum, place a high degree of emphasis on the writing process, and place less emphasis on correctness relative to meaningful written communication.

Depending on the frequency of opportunities for writing extended text, we placed sample classrooms into one of three groups:

- "High-opportunity" Classrooms. This group of classrooms consistently offered at least two different kinds of opportunities for students to write extended text on almost a daily basis--typically, journal writing and some sort of writing related either to classroom experiences, out-of-school experiences, or the content of the academic curriculum. At any time during the year, students were working on some sort of formal writing in addition to having almost daily opportunities for journal writing.

- "Medium-opportunity" Classrooms. In classrooms offering "medium opportunities," students wrote some kind of extended text regularly (e.g., 2 or 3 times a week or more). In most such classrooms, the opportunity took the form of daily journal writing. In addition, on special occasions (e.g., holidays or community events), the students might write extended text related to that event, but such assignments were not consistently included in the daily schedule.

- "Low-opportunity" Classrooms. In this group of classrooms, extended text writing was infrequent or nonexistent. The teachers in some of these classrooms began the year with some sort of journal writing (often used as a classroom management device); however, for the most part, journal writing was dropped from the daily schedule as the year progressed. Other than that, perhaps one or two opportunities were given across the year for writing extended text. Most of the "writing" in such classrooms consisted of worksheets or exercises that involved limited composing at best.

We describe below the characteristics of the three types of classrooms, first by analyzing the high-opportunity classrooms along with several extended examples, and then by contrasting this type of classroom with the other two types.

As suggested by Table V-4, the types differ on many, although not all, of the strategies discussed above. Generally speaking, the differences are substantial, as suggested by the quantitative indicators. However, the indicators used in the table do not capture all of the features of curriculum and instruction considered or reported in the analysis we describe below, which relies heavily on qualitative case reports.

The principal differences between the groups, as revealed by the data in the table, are as follows:

- The high-opportunity group of classrooms shows double the amount of time devoted to writing extended text than does the medium group, and over four times the amount of time than does the low-opportunity group. The high group of classrooms also shows over five times as many extended text assignments than does the low group.

- In the high-opportunity group of classrooms, writing was integrated with other subjects more frequently, both for reading and for other subject areas such as social studies.

Table V-4

STRATEGIES THAT MAXIMIZE MEANINGFUL COMMUNICATION IN CLASSROOMS THAT DIFFER ON THE AMOUNT OF EXTENDED TEXT WRITING

	Amount of Extended Text Writing		
Instructional Strategies	Low	Medium	High
Maximizing the Amount of Extended Text Writing			
■ Average minutes/day students actually write	11 min.	20 min.	46 min.
■ Average number of extended text tasks during 2-week observation periods	1 task	4 tasks	8 tasks
■ Of all writing tasks during observation periods, average percent that involved extended text	23%	52%	77%
Integrating Writing with Reading and Other Subjects: Of all instructional days, average percent on which writing instruction was integrated with--			
- Reading	41%	45%	52%
- Other subjects	21	34	31
Learning Writing Process Skills: Degree of attention paid to writing process: scale derived from teacher log--from 1 (= little prewriting, virtually no revision) to 3 (= extensive prewriting, frequent revision)[a]	2.0	2.1	1.7
Focusing on Meaningful Communication vs. Mechanics			
■ Emphasis on correct mechanics during observation periods: average scale from 1 (= greater emphasis on correct mechanics) to 3 (= greater emphasis on meaningful communication)	1.7	2.1	2.7
■ Embeddedness of language mechanics within instruction during observation periods from 1 (= skills taught primarily out of context) to 3 (= skills taught primarily in context)	1.6	1.6	2.6
■ Connecting writing to students' backgrounds	53%	61%	96%
Encouraging Student-Student Interaction: Average percent of observed lessons in which student-student interaction was permitted or encouraged during writing instruction	48%	61%	59%

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[a] See Appendix A.

- Interestingly, little difference was found on the variable indicating attention given to the writing process. It well may be that even in the low-opportunity group of classrooms, teachers follow some sort of writing process paradigm, but the way in which it is followed could differ greatly among the classroom groups, a difference that we have not captured at this time.

- Teachers in the high-opportunity group of classrooms tended to place greater emphasis on meaningful communication rather than correct mechanics, to embed the teaching of language mechanics in the actual writing task, and to connect instruction with students' backgrounds and base of experience.

- In the low-opportunity classrooms, student-student interaction during writing instruction was much less evident.

Classrooms with a Large Amount of Extended Writing

Brief portraits of "high-opportunity classrooms" at the first-, third-, and fifth-grade level illustrate the ethos, range of practices, and student response in classrooms that include large amounts of extended text writing in their academic program. The first example comes from an inner-city school serving a largely black and Hispanic population, with most of these students coming from poor families.

- Writing in Marcia's First Grade. A visit to this first-grade classroom at any time during the year reveals the importance given to written text. The walls of the classroom are filled with word lists, poems, the class daily newspaper, and stories. All these charts are hand printed by the teacher; most have been dictated by the students to the teacher. Posters displayed around the room during the Christmas season serve as examples of the use of children's text in this room. Two weeks before Christmas, posters (of about 20 words each) are seen, one listing Christmas words, another 's' words, and a third different kinds of forest animals. The 's' words reflect the phonetic sound the students are currently working on. The forest animal list represents the theme of the stories the students are currently reading. The themes of these lists change across the year (during the World Series, a list of baseball words was displayed); however, the number of posters displayed remains fairly constant across the year. Beside each word is a pictorial representation, drawn by the teacher. The students have dictated the text to the teacher, who has written the students' words and drawn pictures so that the students can later identify the words.

  In addition to these dictated word lists, there is a daily newspaper. Each morning, the students dictate to the teacher five or six sentences that comprise that day's newspaper. This newspaper is posted throughout the day and taken home by a different student each day. Also displayed around the room are stories often dictated by the students and poems written by various authors. Approximately 90 minutes of each morning is devoted to students dictating different kinds of text to the teacher and to reading these lists and stories.

Journal writing time occurs for about 30 minutes each morning after recess. In the early weeks of the school year, the students draw story pictures and label these pictures, using words from the lists displayed around the room. Later in the school year, the students write three- or four-sentence stories. They take turns reading their stories to the teacher who types the stories onto a computer file and then prints the student's story. The sentences are cut into strips and each sentence is pasted on a page of a construction paper book. The students then illustrate each page of their book. At the end of journal writing time, a special chair is brought to the front of the room, and students take turns sitting in the chair and reading their stories from their books.

In addition to the daily dictation of text and journal writing, students write several stories across the school year. These stories are related to a current theme integrated across the curriculum. The children write their stories only after several days have been devoted to reading and discussing the theme, and the stories are posted around the room.

A third-grade classroom, in a different kind of inner-city setting, approaches the task of teaching writing somewhat differently, although there are common threads with the preceding case.

- Writing in Heidi's Third Grade. The students in this class (a) learn how to do research and write research reports that will be used in reading lessons, (b) write in their journals several times a week, (c) maintain "reading response" journals in which they write about each story assigned for reading, and (d) write creative pieces frequently. Writing instruction in this classroom is thoroughly integrated with the reading curriculum. For example, after reading about planets, Heidi has the students write a creative story about life on a specific planet of their choice and produce research reports about the solar system on a printing press.

  Writing assignments are given only after much time has been devoted to the topic of the assignment. For example, in writing about life on a particular planet, students read extensively about the solar system, visit a local science museum, and discuss imaginary trips to each planet.

  In addition to the writing assignments related to reading, students write for 10 to 15 minutes each day in their journals on a topic that Heidi assigns. These topics range from analysis of a character from their reading curriculum to writing about their favorite number, their feelings, or more imaginative topics such as "If I had only one eye," "What if we all looked alike," and "What if we lived our lives backwards."

Heidi devotes about 20 minutes a day to component skills instruction. Early in the school year, she conducts grammar lessons out of context; later in the year, however, she uses written text to teach grammar--for example, in one lesson, a poem by Edna St. Vincent Millay was used as an occasion for teaching adjectives, following which, students wrote about where they would like to travel.

The third example, at the fifth-grade level, once again from an inner-city school, depicts an approach that combines elements of the other two, although with differences related to the later developmental stage of the students.

- Sharon's Approach to Fifth-Grade Writing. Students in this classroom have various opportunities to write, because writing is integrated across the curriculum. For example, before taking their field trips, the students write about their expectations, and afterwards they write thank-you letters to their host and reports on what they learned. A variety of genres are assigned during the year, including several creative writing topics and personal and business letter exercises. Students write in journals for 10 minutes a day. These journals are not collected or graded, for students are expected to write mainly about their feelings on any topic of their choice.

  Correctness and component skills receive relatively little attention in this classroom. Sharon does not emphasize mechanical correctness in the beginning of the school year. Instead, she focuses on the substance of the students' writing and the characteristics of the elements of the genre in which they are writing. She tends to correct only student writing that will be mailed to someone outside the classroom community. Such student work is corrected mainly for mechanical errors, not substance.

  Sharon is mainly concerned with giving students a sense that they can affect others through communication. This objective seems to give the students a sense of purpose in writing rather than having the feeling that they are performing an empty exercise.

As these examples suggest, classrooms with large amounts of extended text writing resemble each other in various ways, despite differences in setting and the nature of the students they serve. We discuss below how high-opportunity classrooms appear as a group with respect to the four strategies.

In all the high-opportunity classes, writing is integrated with the reading curriculum. Teachers find various ways of relating what students write to what they read. For example, one fifth-grade teacher systematically assigned her students to write chapter summaries on what they had read that day. She also assigned essays related to the themes of their reading stories--themes such as justice and villainy. In one third-grade classroom, after reading a story about imagination, the teacher assigned a writing task asking the students to write about a problem in their lives that was solved by using their imagination.

First-grade teachers showed the greatest variance in their approach to integrating reading and writing. Some of the first-grade teachers began the school year by having students draw pictures of the stories that they read, and as the year progressed the students began to write about what they had drawn, often of their own volition. One adventurous first-grade teacher, who was experimenting with the concept of inventive spelling for the first time, began the year by asking her students to write about something that they remembered from reading the story "Corduroy the Bear." One student in the class wrote "Corduroy had a bntn bot he ctin fiod ti." (Translated, "Corduroy had a button but he couldn't find it.") Another first-grade teacher, who did not use a reading textbook, read stories to her students and had them dictate stories to her. These stories were read by the class and by individuals. The printed stories were displayed around the room and, if they chose, students could use these stories as a source for their own writing.

The teachers in the high-opportunity group make the connection between reading and writing throughout the language arts lesson. While stories are being read, themes, meaning, and language are discussed. The reading time is rich, and ideas are presented and exchanged. Thus, writing is a natural accompaniment to reading and class discussions. Breaking down the traditional barriers between reading and writing seems to facilitate students' enthusiasm for the writing task.

Several, but not all, of the high-opportunity group of classes integrated writing with social studies and science. This integration usually took the form of reports and letters. For current events, students wrote letters to persons such as the principal, baseball players on a local team, and officials at the local public broadcasting station. These kinds of assignments were frequent and related to events in the children's lives. For example, a letter to a famous baseball player preceded attendance at the team's next home game. One exceptional fifth-grade teacher attempted to facilitate the development of her students' metacognitive skills by systematically giving her students science problems and requiring them to write their thoughts as they went through the process of solving the problem.

With regard to their emphasis on component skills and correctness, teachers in classrooms with a high degree of extended text writing tended to place the least emphasis on discrete skills in writing mechanics. Nonetheless, all teachers in the high group devoted some time to teaching these skills, typically within the context of the students' writing. For example, one fifth-grade teacher taught her students correct usage of quotation marks as part of a story-writing assignment that contained dialogue. Other teachers in the high group used examples from students' writing to discuss certain grammatical concepts.

The issue of correctness is more complicated. While nearly all the third- and fifth-grade teachers in the high-opportunity group were concerned about the correctness of their students' writing, they dealt with this issue in different ways. Some of the teachers used peer editing sessions, thus removing the teacher from the role of evaluating correctness. Other teachers noted needed corrections on the students' papers and gave them an opportunity to revise their work before they submitted the final draft. The primary concern of these teachers was to establish an environment conducive to students' generation of text, and the teachers did not want to hinder students' fluency by overemphasizing the mechanical correctness of the text.

Teaching the process of writing is a more complicated story. The attention given to the writing process varies within the high-opportunity group. Different patterns appeared for prewriting versus revising and editing:

- Prewriting. All of the high-opportunity group classes devoted substantial time to prewriting activities. Because writing in these classrooms was so often integrated with reading, much of the prewriting involved reading and discussion. On other occasions the teachers used school-based experiences such as a field trip or a walk around the school to develop material for the students' writing. Prewriting sometimes took the entire lesson for a given day or even several days. During this time, the teachers attempted to build structures for their students that would facilitate their writing of extended text. The teachers view prewriting as a significant part of instruction demanding careful and systematic planning.

- Revising and editing. Less than half of the classrooms in the high-opportunity group devoted much time to revising and editing, and in two of these classes, peer response groups were used (although apparently not with any kind of formal response sheets). For the most part, these response groups did one of two things--editing the writing for mechanics or identifying areas where the writer might provide further description or more information. Other teachers in the high-opportunity group ignored the revising and editing phase, believing that this was not important or necessary.

Overall, the high-opportunity classes devoted considerable time and effort to prewriting and drafting text, but other phases of the writing process were not given equal attention.

Regarding the social context of the writing task in high-opportunity classrooms, it was rare to find students talking among themselves and working together in high-group classes. Most exchanges of ideas were led by the teacher and occurred before the actual composing began. In some of the third- and fifth-grade classes, student-student interaction took place as part of peer editing of students' writing as students helped each other in their final editing (usually mechanics).

Journal writing was an exception to the pattern just described, especially in first-grade classrooms. In one first-grade class, for example, the teacher allowed her students in the beginning of the year to talk during journal writing; at the same time she was concerned about the fact that some of her students were copying each others' writing. As the year progressed, however, the teacher began to view these exchanges as simply one source of ideas. In another first-grade classroom, children were allowed to write at their tables or on the floor. Each day during journal time, a group of students were gathered on the rug, talking about their writing. For the most part, journal writing in these first-grade classes is a buzzing, happy time, with children writing, talking about their writing, and sharing crayons as they illustrate their writing.

At the same time that they typically restricted students' interaction with one another, teachers in the high-opportunity group did much to structure the writing tasks, so that students proceeded from a highly structured activity early in the year to a less structured one later on. For example, two first grade classrooms approached writing as follows:

- Progression of writing assignments across the year in Marcia's classroom. The assignments moved from drawing pictures about what had been read to writing short words that students sounded out phonetically as labels for pictures. By early November, the students were filling blanks in sentences. From late in November through January, they were completing sentences with their own ideas, writing their own sentences, and writing letters within a prescribed format. In February, they began writing stories and poems in a prescribed format and moved into writing completely on their own. In early March, they began writing poetry because the teacher believed the students had a good handle on rhyme and were ready to use more sophisticated language.

- The use of structured writing prompts in Maria's first grade. In this classroom, the teacher structured the writing task with the use of prompts. The complexity of the writing required in students' responses to these prompts increased as the year progressed. In the fall, for example, students responded to the following prompt: "If I had a pet penguin, I would name it ______. It would eat ______. It would live in ______. Having a pet penguin was neat because _____." Toward the end of the year, a prompt read: "One ______, my best friend and I __________." Children were expected to complete the prompt with a piece of writing containing three or four sentences.

In classrooms characterized by large amounts of extended writing, students wrote to various audiences--themselves, their teachers, and to outsiders. As a group these classrooms were more likely than others to write with themselves as a primary audience (because they did a great deal of journal writing) and to individuals or groups outside of the classroom (because they did a great deal of letter writing). Letters were typically about local topical events or issues, and were for the most part actually sent to the person or group in question.

Classrooms with Less Extended Writing

The remaining classrooms in our sample were classified as offering either moderate or few opportunities for extended text writing. The pattern of curriculum and instruction in these classrooms differs in various ways from the high-opportunity group, as the following examples and analysis demonstrate. Our discussion combines the "medium-opportunity" group of classrooms and those with little or no extended text writing, because the differences between these two are not major and are generally a matter of degree.

Descriptions of several low-opportunity group classrooms highlight the differences.

- Writing in Hannah's First Grade. Writing mechanics are the centerpiece of Hannah's writing curriculum. Her objectives for the year are to help her students write a simple sentence, recognize a sentence, know punctuation and mechanics, and spell common words. Writing instruction occurs about once a week, including work on spelling, based on a list provided in the basal reading series. During this time, students usually complete worksheets focusing on some sort of writing mechanics skill. Occasionally, students write in journals by copying sentences like the following from the chalkboard: "Today is Monday, December 4, 1989. It is a sunny day. It is a beautiful day." The students illustrate their writing after they finish copying it. Later in the year, Hannah encourages the students to add their own sentences after they have copied the sentences written on the chalkboard.

  Most of the writing done in this classroom is related to spelling assignments. Students have to write sentences with their spelling words, and the teacher corrects these sentences for spelling, punctuation, capitalization, and neatness.

  Hannah places great emphasis on correctness, so much so that when students are given the freedom to express themselves through writing, they are greatly concerned about their spelling. Because they have not been taught to spell phonetically and very few word lists are displayed around the room, they depend on the adults in the room for the correct spelling. Thus, it is common to see much movement and waiting in lines during the infrequent writing activities.

Other classrooms in this group set up similar routines aimed at building language skills, which provide few opportunities for writing text, as the following third-grade case illustrates:

- Writing in Martina's Third Grade. In this classroom, writing occurs occasionally, but only when there is a disruption in the normal schedule of lessons, such as when the art teacher is ill or an assembly is canceled (we learned of one such assignment during our visits). In such instances, students are asked to write a paragraph that completes a sentence such as this: "If I were a gift, I would be ______________________________________."

  Instead of written text, instruction focuses on spelling and grammar. Each morning, 10 to 15 minutes is devoted to spelling and a similar period of time to grammar. Spelling assignments follow a weekly pattern: On Monday the words are presented and students copy them; on Tuesday students complete a workbook exercise using the words; on Wednesday they take a pretest; on Thursday they complete another workbook exercise; and on Friday the students are given a posttest.

  Grammar lessons follow a similar format, but with a little more oral participation by the class. In both spelling and grammar, students' exercises are monitored and corrected periodically (however, we never saw any papers being returned to students).

  In part because of the emphasis on spelling words or using grammatical forms correctly, it does not seem easy (nor is it Martina's intention) to integrate writing with reading. Virtually all written work in her class involves restricted writing with relatively little room for composing or elaborating thoughts.

Classrooms with a moderate or small amount of extended text writing thus look fairly different from the high-opportunity group described previously. We review below the key differences on the strategies we have been using for analysis.

Typically, classrooms in the medium- and low-opportunity groups integrate writing with other subject areas less than the high-opportunity group, or not at all. In part, this reflects the fact that because less extended writing is done, there is less to integrate. But also, teachers assign writing tasks that are not designed to connect with the learning taking place in reading, social studies, or other areas of students' work. Thus, in journal writing, students either select their topic or the teacher assigns a topic unrelated to other subject areas. In addition, broad generic topics such as "Write what you do when you get bored" are common among these classrooms.

To be sure, some classrooms give students opportunities for writing extended text that can relate to other subject areas. For example, students are sometimes asked to write in the same genre as what they are reading--a poem, a letter, a story, or whatever. One third-grade teacher in this group gave her students the following instruction for writing. *"Think of a name for your story. Think of something your character has done. It might be a trip you went on or a real story like 'The Lost Key.' Think of a story. It might be a strange or funny story."* In a rare writing assignment, another third-grade teacher in the low group assigned the following writing task: *"Write about one of your favorite stories; it doesn't matter which one, as long as we've read it."* These instructions reveal a lack of "scaffolding"--that is, a framework for writing activity that helps students move from reading to writing. In all these examples, the writing is simply a "tag-on" to the reading, not an integral part of a unified activity. As a result, very little integration with other subject areas occurs. The lack of scaffolding, of preparing the students for the writing task so that it naturally flows from class discussion or other learning activities, is a salient difference between the high and medium groups of classes.

Teachers in the medium- and low-opportunity groups focused heavily on component skills and correctness and tended to have a view of writing development as the acquisition of discrete skills that would later be applied to extended text. Relative to other teachers, they were more likely to focus on correctness because they believed that students need to acquire the rules of writing before they can write any meaningful text.

Accordingly, language arts lessons in these classrooms are often devoted to exercises from a textbook--mainly requiring seatwork. The teacher might talk briefly about the concept to be covered, such as past tense and present tense, and then students are asked to complete the exercises from the book. In such instances, the time used for teaching mechanics takes away from the time that could be used for writing extended text. By contrast, teachers in high-opportunity classrooms are too busy with extended text writing to devote a great deal of time to teaching component skills out of context.

Regarding the attention they gave to the writing process, on the whole, teachers in the medium- and low-opportunity classrooms paid somewhat less attention to writing as a process than teachers in the high group. The exceptions were typically within the medium group, such as one teacher who had her room decorated with posters describing the various phases of the writing process and examples of each. Unlike high-opportunity group classrooms, however, these teachers did not invest large amounts of time in prewriting, preferring to spend equal time on all aspects of the process.

The key difference across the sample probably has less to do with whether teachers taught about the writing process and more to do with how they taught it. Along with the shift in emphasis away from prewriting, these teachers also used prewriting time differently. Rather than bringing students' cultural background or out-of-school experiences into the prewriting activity, as many teachers in the high-opportunity group did, teachers in the medium group tended to use the activity as a way to provide the students with new information. This may have been because teachers preferred all students to have a common experience for a given writing assignment or that they were fearful of the kinds of experiences their students might report.

PART THREE:

INSTRUCTIONAL PATTERNS THAT CUT ACROSS SUBJECT AREAS

In this part, we shift from the examination of what is being taught, and how, in particular subject areas to more generic concerns that, in one way or another, pervade the instructional day.

First, in Chapter VI, we describe how supplemental instruction is organized and identify models of supplemental help. Although supplemental programs are typically aimed at particular subject areas, our focus here is to characterize in more generic terms what kind of contributions these services are making to the overall instructional program.

Next, in Chapter VII, we pull together what we have learned so far about the major influences on classroom management and the teaching of mathematics, reading, and writing. Here we consider not only the characteristics of the students and teachers, but also external forces in the school, district, and state environment surrounding the classroom.

Finally, in Chapter VIII, we reflect on what we have learned so far and sketch areas that deserve more careful study in the second year of the investigation.

VI SUPPLEMENTAL PROGRAMS

As one would expect for a group of schools serving high concentrations of poor children, the schools in our sample enjoy support from a variety of special-purpose programs. This chapter describes the programs and mandates affecting these schools, highlights the general advantages and problems associated with supplemental staff, and then describes and analyzes several major instructional models found in supplemental programs.

Sources of Supplemental Instructional Support

Federal, state, and local programs and mandates provide support for supplemental services in these schools. Each school's mix of services reflects characteristics of its student population and of the programs available in its state and district.

Due to their relatively high concentrations of poverty, schools in this sample participate in Chapter 1 of Title I of the federal Elementary and Secondary Education Act. This program offers extra dollars to high-poverty schools, with the requirement that the dollars support extra services for students who are performing poorly in academic subjects. In its most recent legislative overhaul, Chapter 1 acquired a stronger focus on bringing participants up to the level of performance expected for their grade level, including performance in more advanced skills. This change was intended to discourage schools from focusing their Chapter 1 programs on low-level drill in basic reading and math skills. In addition, the law emphasizes the need to coordinate Chapter 1 instruction with the regular classroom program. Within these mandates, districts and schools are free to design and staff their Chapter 1 programs as they choose, using reading specialists, math specialists, and instructional aides either inside or outside the regular classroom.

The federal presence is also felt in these schools through supplemental services mandated under the Education for All Handicapped Children Act. Students with disabilities are identified through a formal diagnostic process that includes consultation with parents. Once identified, the students receive services congruent with their particular needs, with an emphasis on maximizing their participation in regular classroom instruction. For students in the classrooms we observed, special education services generally consist of spending part of the school day in a resource room with a special-education teacher.

Many students with limited English proficiency receive special services as a result of state law or federal civil-rights mandates. The intensity and design of these services depends heavily on local and building-level decisions, but the general idea is to ensure that students make a transition, at an educationally appropriate pace, to participation in English-language instruction. For students whose English is limited, the special services may take the form of special classes in language development or in-class assistance from someone proficient in their home language.

Two districts in this sample offer special services as a result of desegregation proceedings. Because they have some schools that are racially imbalanced, they have agreed to put extra resources in the high-minority schools. Staff/student ratios are higher in these schools, and specialists are available for help with reading, mathematics, and instruction in English as a second language (ESL), as the composition of the student body warrants.

Finally, most of the schools have computer labs offering instruction that supplements regular classroom work. Unlike the other services described above, instruction in the computer lab is not targeted to particular types of students; it is offered to all. However, we discuss it here because it has several similarities to the other types of supplemental instruction, notably the fact that it addresses language arts and mathematics but is subject to varying degrees of control by the classroom teacher.

What Supplemental Staff Members Bring to These Schools

The most significant resource that special programs bring to a school is staff. While the supplemental personnel in these schools have all the diversity that would be expected in any group of instructional staff, our analysis shows that as a group they bring some characteristic advantages and problems to their schools.

Extra Bodies

At the risk of stating the obvious, an important contribution of supplemental programs and mandates is that they enlarge the school staff. Depending on local priorities, this can mean a smaller overall class size, different grouping arrangements, team teaching, individual help for children, clerical assistance for teachers, or more intense supervision of instruction. We will elaborate below on the instructional models found in these schools, but some examples of the services made possible by supplemental staff are the following:

- In a first grade composed of students who have repeated either kindergarten or first grade, a Chapter 1 instructional aide is present for most of the day. All the children work with her at some point during the morning, on activities that she and the teacher have planned during breaks and in the afternoon. During reading, she takes small groups to work on letter recognition, sounds, or vocabulary reinforcement; during mathematics, she helps the group that is not with the teacher at that time. Thus her presence nearly doubles the amount of individual adult attention available to each child.

- In a school where teachers are following a mandate to provide whole-class instruction in language arts, the class divides into four groups for part of the language arts time block. Two teachers and two aides each work with one group, providing differentiated help with skills that the group needs to practice.

- A multicultural resource teacher works with fifth graders in another school. Besides providing extra language-arts work for six gifted students, this teacher sometimes team teaches with the regular classroom teacher.

Diversity

While the regular classroom teachers in many of these schools are diverse, the staff of supplemental programs further increase the schools' ethnic and cultural diversity.

- A mathematics specialist, placed in a virtually all-black school due to the district's desegregation order, is the only adult black male in the school. He is often called upon to handle discipline issues with black boys, and he draws on cultural topics in his teaching (e.g., using graphs to illustrate the achievement gap between black and white students in the district).
- In some ethnically diverse schools, instructional aides in the ESL program are the only adult members of some students' own ethnic groups, such as Cambodians.

Specialized Skills

Some of the staff members in supplemental programs have advanced professional training relevant to the students' needs. Among the examples are the special education teachers, reading and mathematics specialists, and ESL teachers. Classroom teachers do not always hold high opinions of the special teachers' expertise or of their teaching effectiveness. Still, there are instances in which they do respect the specialized skills that these teachers bring to the building.

- At the beginning of the year, one first-grade teacher was dissatisfied with the amount and kind of help she received from the Chapter 1 reading specialist. By the end of the year, the specialist had slightly increased the amount of time she spent with children from this teacher's class, and the teacher had decided that the specialist's insights into children's learning styles and problems were helpful after all.

Supervision

In many cases, supplemental teachers seem to work at the fringes of the school's regular educational program. However, some supplemental staff members--those funded from state and local sources, not federal ones--at least try to oversee the regular instruction in their buildings. In one rural school, for example, both the reading and math specialists are influential. For example, in regular meetings with the grade-level teachers, the state-funded reading specialist finds out where they are, answers questions about a new instructional program, and tells them they should be covering more material. The math specialist also exhorts teachers to cover more topics in the math scope and sequence. In another school, the reading specialist must administer a test to the children in a class before the class can move on to the next unit in their basal reader.

Unpredictability

So far, we have emphasized the advantages that supplemental program staff bring to their schools. But a drawback is that their presence is not as dependable as that of most regular staff members, particularly in some schools. Some reasons for their unpredictable availability as instructors are the following:

- While bilingual aides may be nominally assigned to classrooms, they may also be the school's only available translators for parents who come to the office. Some of our teachers could not count on their Spanish-speaking or Southeast Asian instructional aides being in the classroom because these aides were so often called upon to serve as translators.

- One district pays very low wages to substitute teachers. In one school in that district, where the teachers were plagued with health problems and other personal problems, the principal continually called on supplemental program staff to cover the classrooms that did not have substitutes. As a result, supplemental instruction barely got off the ground.

- Because of changes in external funding or instructional decisions made at the district level, staff configurations change from year to year in supplemental programs. In several schools, classroom teachers expressed disappointment that resource teachers were no longer available to work with children. The reasons for their unavailability varied: one district laid off all its ESL teachers, then tried but failed to rehire them; two other districts decided to reduce the role of pullout instruction in their Chapter 1 programs.

Instructional Models Found in Supplemental Programs

No two classrooms in this study are alike in their configuration of supplemental services. Their students are eligible for different programs; the same program is staffed differently from school to school; individual staff capabilities vary, as do the working relationships between special staff and classroom teachers. Thus, the set of services a child can receive and the way these do or do not connect to regular instruction are virtually unique from classroom to classroom. For analytic purposes, however, we can distinguish six characteristic models for supplemental instruction. Readers should bear in mind that each classroom experiences more than one of these models, and many students do as well.

In this section, we describe each of the six models. The examples used here are chosen because they exemplify the way a model works. We have also chosen examples that illustrate both the positive and negative aspects of a model, according to our best judgment at this point in the study.

Help with Seatwork

This is both the most amorphous and the most common mode of supplemental instruction in this sample of schools and classrooms. Almost always provided by an instructional aide, this help is often available on an ad hoc basis for any child who asks. Sometimes, though, it is restricted to certain children. When it is funded by Chapter 1, it is restricted to eligible children. In other cases, the help comes from a bilingual aide and is offered only to those students who speak another language.

Help with seatwork serves two main functions in the classroom. First, by providing extra adult supervision for seatwork, it frees the teacher to concentrate on a small group of students while the others can be productively occupied. This is especially common in reading instruction, where the teachers often work with small groups. Second, it gives some reinforcement for the skills that the students are practicing in their seatwork; this is true in both reading and mathematics instruction.

Classroom teachers vary in the extent to which they help plan what kind of help students will receive with their seatwork. Scheduling has a big influence on the extent of joint planning; for example, an aide who helps with seatwork may be available in the classroom for only an hour or two, which may not coincide with any of the teacher's planning time. The district and school can increase or decrease teachers' and aides opportunities to plan, as the following examples illustrate. In the first, the district has structured planning time into the teacher's week, including the aide's Chapter 1 supervisor as well as the aide herself; in the second, the school's other needs crowd out an aide's and teacher's opportunities for planning.

- The Chapter 1 director in one district places a high priority on joint planning. Thus, a first grade teacher has a weekly three-way planning session with the Chapter 1 aide who works in her classroom for language arts and the reading specialist for the building.

- The aide assigned to a fifth-grade classroom, who was a teacher in Hong Kong before emigrating to the United States, is scheduled to be in the room from 10:00 to 12:00 to help with both language arts and mathematics. However, she arrives unpredictably because she is in great demand as a translator for the whole school. The teacher therefore finds it impossible to plan with her. As a result, in language arts the aide does mostly clerical work such as filing, correcting papers, and making dittos. In math, the teacher sometimes leaves her a note indicating which students need extra help with their seatwork.

Sometimes, the seatwork helper stations herself or himself at a table in the classroom, where students know that they can bring their questions. In other cases (or at other times), the helper circulates around the room, pausing to help individuals. A typical example is the mathematics help available from a Chapter 1 aide in this first-grade classroom:

- The aide comes into the room unobtrusively at the beginning of the math period. She usually works with one child at a time on assignments that the teacher has given to the whole class. Occasionally, she pulls one or more children aside for drill on math facts or to play a game. To the teacher's regret, the aide is allowed to work only with the six children eligible for Chapter 1 services.

The bilingual aides sometimes station themselves right next to a particular child who needs help, as is the case in another first-grade class:

- If a student who can speak no English is enrolled in the class, the teacher usually has the student sit with the aide when the teacher believes the child cannot follow the instruction. During this time, the aide translates for the student and gives him or her manipulatives (designed by the teacher) to use. The teacher reports that usually this kind of isolation lasts for only about a month.

Help with seatwork is available for only part of the school day in these classrooms, but it can be available for as much as four hours per day. The most complicated arrangement is found in the classroom where three or four different aides are present for about 40 minutes each.

Although there seems to be a general feeling that help with seatwork is a good thing for students, one first-grade teacher pointed out a drawback--that students can become too dependent on adult help. She commented that she watches for signs of dependency and asks the aide to "pull back" if it seems to be developing. We would guess that this is a problem in other classrooms, although it does not seem to be a salient one for teachers.

Using an aide to provide help with seatwork may also be a model that reflects an underlying problem of the aide's unpredictable availability or limited instructional skills. Some teachers might want to plan a more structured supplemental learning opportunity for their students if they could count on a staff member a) being there and b) having the needed skills. But when the aide "usually appears at math time," as one of our classroom write-ups says, the teacher must necessarily fall back on an unstructured use of the aide's time. And another teacher who uses her Chapter 1 math aide for help with seatwork does not trust the aide not to do things that might confuse the children. Although these teachers did not tell us that help with seatwork is a way of making the best of a poor resource, we think this might be the case.

Special Grouping Arrangements

In some cases, a major function of supplemental instruction is to provide students with extra work or differentiated work in a small group, inside or outside the regular classroom. Sometimes the distinction between this model and the one just described, help with seatwork, is blurry; an aide who is primarily working with individuals during their seatwork time may give three or four students a session on some phonics skill at the teacher's request. But the following examples illustrate a more purposeful and regular use of special grouping arrangements:

- A first-grade class has the traditional reading groups, each of which spends time with the teacher, but the lowest group receives two extra doses of instruction. A state-funded reading resource teacher takes the group into the hallway outside the classroom and conducts regular lessons that emphasize phonics. An aide also works with this group at another time during the day, following a lesson plan from the teacher.

- Another first grade has a 3-hour block of language arts instruction in the morning. Whole-class instruction is interspersed with small-group work, in which the regular teacher, regular aide, Chapter 1 teacher, and Chapter 1 aide each take one group. The teacher characterizes the Chapter 1 groups as providing "remediation for students with deficits in several skill areas."

An important part of the story in both of the above examples is that these classrooms are under a mandate to provide whole-class instruction. As the teacher in the second example says, her less able students "have to struggle along with the smartest in the whole [class]." Concerned that these students will be unable to keep up, these teachers welcome a special small-group intervention as a supplement to their whole-class technique.

Another first-grade classroom, not using whole-class instruction, also offers Chapter 1 students an extra small-group intervention:

- The Chapter 1 aide pulls five to seven students into a small area at the back of the classroom for 30 minutes each day. There, she carries out language arts activities that follow the classroom teacher's written plan. On one occasion the students' assignment was to write a play, but more often the tasks were focused on discrete skills such as identifying vowels, and the materials used were the basal readers or flash cards.

In still another classroom, the grouping arrangement simply represents a division of labor between the teacher and the aide for reading instruction:

- In this third-grade class, the teacher allows the aide to choose which of the two reading groups she will work with. The aide usually chooses the lower group because she considers that group easier to prepare for. The teacher and the aide cover the same skills, but the groups work in different readers. The observer for this study also characterized the teacher as doing more creative activities, while finding that the aide was not as good at explaining things or knowing when to explain them.

Clearly, the lower reading group in this last classroom is placed at a disadvantage by this arrangement. The strengths and weaknesses of the other special grouping arrangements that we observed are less clear-cut. The "triple dose" in the first example above seems likely to help students (if it does not bore them to distraction). In the second example, it is not entirely clear whether Chapter 1 provides something extra to participating students, since every child in the class has the same amount of small-group time. What it does is (1) to permit the teacher to include reading groups within a whole-class model and (2) to provide differentiated instruction, geared to a lower level of skill development. It has much in common with the next model we discuss, which is characterized by its focus on children's skill deficits.

Specialized Remedial Instruction

The most distinctive feature of this model of supplemental instruction is that it grows out of a relatively formal diagnosis of children's needs, either on an individual basis (e.g., in special education) or for a group (e.g., ESL instruction for Hmong-dominant children). It typically involves instruction from a certified teacher with special training--but in quite a few cases the instructor is an aide, receiving varying degrees of supervision from a specialist.

This instructional model is exemplified by the special education resource room, where a specialist teacher works to remedy the educational deficits identified in each child's individualized educational program. Special education is not a prominent part of the instructional scene for any of our classrooms, since only two or three children at most participate in it. In general, the resource room represents a kind of Bermuda Triangle for the instructional program: the classroom teachers tend to know little or nothing about the instruction that takes place there. One fifth-grade teacher complained that she had asked the special education teacher for a written report on what she was doing with the children but had never received one.

Similarly, the ESL instruction offered in these schools typically proceeds along a track that is independent from regular classroom instruction. For example:

- A group of students leaves a first-grade classroom for 40 minutes every afternoon. While their English-dominant classmates who have stayed behind in the regular classroom read a story, ask questions, make predictions, and talk about the components of the story, these students participate in language-development activities such as singing songs and learning rhymes.

- Four fifth graders leave their classroom every day during reading time to go to the ESL lab, where they and five sixth graders work on vocabulary development, with lots of opportunities to write. A different program takes eight students out each day to work with the learning resource teacher, who uses a third-grade reading series, language-development exercises from workbooks, and other materials to build fluency in spoken English.

- A first grade has a bilingual aide in the back of the room for most of every morning. As the year progressed, the aide's program became more and more independent of the teacher's, with the aide's preferred topics of vocabulary and phonics taking the place of the teacher's original lesson plans.

Remedial services provided by Chapter 1 and state- or locally funded specialists often follow this model as well, with varying degrees of connection to the regular classroom program.

- Students from a fifth-grade class receive specialized remediation from one or both of two specialists, the Chapter 1 teacher and the locally funded reading resource teacher. The latter program, in particular, focuses on practicing skills in isolation. The Chapter 1 program in this school relies on a form, developed by the Chapter 1 teacher, that summarizes which children need help with which skills, as shown by their performance on a criterion-referenced test.

- Fifteen first graders in another school go to the Chapter 1 reading room for 45 minutes, where they split into groups that work with two teachers and two aides. The activities observed on a typical day include a drill on vowel sounds (featuring flash cards, exaggerated sounding out, and answers in unison from the children); a word recognition game; a workbook several levels below the regular class work; and an aide reading from a trade book. The classroom teacher thinks this program is a waste of time because of its heavy skill focus and limited demands on the children; she says, the children just come back from the reading room "with another 'sh' ditto when they learned 'sh' months ago...they never do any writing up there."

As the last example shows, this model is one that can stir strong feelings among teachers. When specialized remediation has its own instructional agenda that differs from that of the teacher, the teacher ignores it or dislikes it. In other cases, however, teachers respect the specialists' expertise and consider the supplemental instruction a useful way to shore up students' skills. Teachers who perceive this kind of instruction as valuable tend to have more communication with the specialists--but it is probably not accurate to say that better communication improves the perceived contribution of the program. Instead, it seems at least as likely that teachers are inclined to communicate more with the specialists whose programs they respect.

Advanced Work

A relatively rare model for supplemental instruction is that of advanced work or enrichment that goes beyond the regular classroom program.

- Six gifted students in a fifth-grade class receive extra instruction in language arts from a multicultural resource teacher. They read and write about different cultures and make presentations to the school during assemblies.
- Third- and fifth-graders in another school participate in a modified version of the Higher Order Thinking Skills (HOTS) program, which takes place in the computer lab and focuses on the development of thinking skills detached from particular academic subjects. While HOTS classes are supposed to take place four times per week and to continue all year, this school has stretched the services to cover more students and therefore has cut the frequency to two periods per week for half the year. This HOTS program is partially under the auspices of Chapter 1.

- In the same district, a year-round school offers Chapter 1 services during intersessions. Students who are selected by their classroom teachers can volunteer to participate in the program, which includes elaborate writing projects as part of language arts, and hands-on problem solving (e.g., measuring a snake) and various computer-based activities as the major foci in mathematics.
- One ESL lab offered fifth graders many opportunities to write, unlike nearly every other supplemental instructional program observed in these schools.

Extending the School Day or Year

Another rare model is the use of supplemental programs to increase the amount of instructional time available to students. The only example of using outside funding in this way is the Chapter 1 program offered during intersession in a year-round school; this program is discussed above since it features a relatively high-level curriculum. But a few schools do offer opportunities for after-school instruction of various kinds:

- After-school tutoring in test taking is offered for third-grade students with average skills, on the theory that boosting these students' performance is the most efficient way to improve the school's average scores on its standardized test.
- A student teacher provides after-school help for third graders who need help in mathematics.

Computer Labs

Instruction in the computer lab differs from many other kinds of instruction discussed here in two respects: it is not funded from outside sources, and it is not targeted to particular students. However, it is worth including here because it does supplement regular classroom instruction, and because it presents a remarkably homogeneous story across our sample. In virtually every case where students have access to a computer lab, the story is this: once a week, either half the class or the full class spends 30 to 45 minutes in the computer lab, where students work on software selected by the computer specialist in consultation with the classroom teacher. A primary aim of this work is to provide drill and practice on isolated skills through a medium that the children enjoy more than workbooks. There is usually an attempt to match the skills to those being taught in the regular classroom, usually in mathematics but often in language arts as well, but the success of these attempts is limited by the availability of appropriate software.

Putting It All Together

Most classrooms, as we have said, experience more than one of these instructional models. Two examples can illustrate how the programs add up for a particular classroom. (The second example represents the most complex configuration of extra help in this study, it should be noted.)

- In a fifth grade, a Chapter 1 teacher works with students individually during math, helping the student through every step of the problem; she says her philosophy is to "never let a student get the wrong answer in the first place." An aide takes four or five students to a partitioned room for part of the regular math lesson, providing special practice on that day's topic. Two students go to the Chapter 1 reading teacher for most of the year during the time when they have assigned seatwork (resulting in a heavier homework load for these students); the teacher says this instruction is coordinated with regular teaching. Finally, a locally funded reading specialist pulls different groups occasionally for isolated skill practice in language arts.
- A third-grade "language development class" has 22 students, of whom 8 are native English speakers. The class size is small because of the district's desegregation consent decree. Three aides each spend 40 minutes in the room; one works with the reading group that the teacher does not work with; another sits at a table in the back of the room and offers extra help to students identified by the teacher; still another works with students of limited English proficiency who need ESL instruction or support in language arts and math. During May and June, a resource teacher took over from the first aide in teaching one reading group. The assistant principal taught lower-achieving math students, starting with five students at the beginning of the year, sending three back to the classroom in January, and the others back in the ensuing months. Computer instruction is planned with the classroom teacher.

Cross-Cutting Themes and Speculations

With just a few exceptions, the classrooms we studied have a large and diverse array of supplemental services available to students. Key dimensions of the variation in these services include the skills of their personnel, the degree of day-to-day connection to instruction in the regular classroom, and the fluidity of targeting on particular students.

- Varying staff expertise. In general, aides are at the low end of the skills continuum and teachers at the high end, although there are many individual exceptions to this pattern. Some teachers keep a close watch on their aides' help with seatwork because they do not have a very high opinion of the aides' skills; others assign clerical tasks to aides for the same reason. However, classroom teachers who think specialist teachers are not very skilled are not often able to do anything about this problem.

- A continuum from connection to isolation. We saw some effective partnerships between teachers and aides and between pairs of teachers. We also saw teachers who supervise their aides closely because they think they have to, and those who have given up on supervising aides with whom they disagree. We saw many supplemental programs that operate in isolation from the regular classroom--with educational effects that we are most often unable to judge, although there are a few cases of special instruction that clearly mires students in isolated, low-level skill drills.

- The fluidity of targeting. The flexibility of student targeting also varies in ways whose effects, regrettably, we are unable to judge. Help with seatwork is usually targeted in an ad hoc way (and this can be true in Chapter 1 as well as locally funded programs, despite the efforts of local Chapter 1 directors to restrict it to eligible students). Supplemental grouping arrangements have a greater degree of permanence, as does specialized remediation. We tend to think it is better for students to be able to move in and out of special instruction, but our data do not support judgments one way or the other on the effects of this practice.

The implications of this variation in supplemental arrangements for the academic program students receive have not been fully explored as yet, but we can make the following observations. First, the background and expertise of supplemental program staff predisposes them toward teaching certain kinds of content (if they teach at all) and even toward certain methods of teaching. Thus, at one extreme, the aides with the least training in reading or math are likely to teach basic skills in a highly traditional way, whether or not the regular classroom teacher has emphasized different things. Such staff are typically not equipped to help teach comprehension strategies or to probe students' reading at other than a literal or recall level of understanding. At the other extreme, specialists are often as prepared as (or more than) regular classroom teachers to handle more challenging teaching approaches, although their beliefs about what constitutes appropriate content and approach are likely to dictate what they actually do with children.

Second, unless carefully orchestrated, supplemental instruction arrangements risk fragmenting the content children receive. All the models of supplemental instruction have the potential to teach ideas, skills, or procedures that are at odds with--or simply disconnected from--what children are taught in regular instruction. Our observations confirm that this occurs on many occasions. We cannot comment directly on the implications for student learning or performance, but the odds are that children will not greatly benefit from a more fragmented instructional experience. It is possible, of course, that the fragmentation attributable to supplemental instruction is no different nor any more detrimental than the fragmentation experienced in some regular classrooms.

Third, supplemental instruction tends to differentiate curriculum and instruction more than would be the case without it--that is, the presence of these programs changes what is taught to certain groups of children (typically low performing). Differentiation is clearly useful in many instances, and sometimes necessary. There are children who are literally lost in the flow of activity in the regular classroom; for them, a largely separate, specialized curriculum is virtually the only answer. In still other cases, the differentiation seems to serve no useful purpose and may even be harmful, and therein lies a large potential drawback in the service offered by supplemental programs.

These implications of supplemental instruction for the academic program deserve fuller analysis of first-year data and more careful exploration in the second year. In particular, we need to look closely at what is being taught in supplemental instruction and whether it is being taught in a way that furthers overall academic learning goals.

Finally, a topic that deserves more exploration in the study's second year is that of the working relationships among staff--and, in particular, the classroom teacher's degree of control over supplemental services. From this year's work, it appears that placing supplemental services under the teacher's control--or establishing solid partnerships between the teacher and the supplemental staff--would be a major change for most of these classrooms. The impression created by our qualitative write-ups is that supplemental services and staff members come and go in mysterious ways. It seems to be rare for a teacher to face a stable configuration of programs and supplemental staff from year to year. Thus, it is not surprising that sporadic attempts at formal and informal instructional coordination seem to have weak effects in most places. But this is rather speculative and deserves more data-based examination next year.

VII EXPLANATIONS FOR THE PATTERNS OF ACADEMIC INSTRUCTION

Previous chapters in this report have presented contrasting patterns of instruction and management across the sample classrooms. We now consider the forces and factors that drive classrooms towards one or another profile of mathematics or language arts instruction and classroom management.

Each classroom in the sample represents a unique set of variables that combined to produce an environment for academic learning over a school year. There are, first of all, the students with their own individual characteristics, personal histories, and learning styles or needs, as well as the class--an entity that is more than the sum of its parts, with its own distinctive character. Then there is the teacher, with his or her singular array of background, training, and experience. The interactions between teachers and their students are embedded in schools and districts, each with policies, norms, and support mechanisms that can have an impact on every classroom in some way. Finally, each classroom sits within a state context which may have an increasingly strong influence, albeit indirect, on what teachers do.

There is striking consistency in the kinds of explanations that pertain across subject areas. We discuss the most important forces at work in each category, noting differences in the way they apply to classroom management and to the three subject areas. The discussion presented in the interim report is based primarily on cross-case analysis and should be thought of as an initial set of explanations that will be probed more deeply in the final report, using both quantitative and qualitative data sources.

The Nature of the Student Population

Throughout the conceptualization and planning of this study, we have been very aware of the dangers inherent in using a deficit model to explain differences in instruction. We listened carefully for examples of teachers who explained their choice of instructional strategies in terms of "what these children need." Virtually no teachers in the sample classrooms blamed children's academic problems on racial or ethnic backgrounds. Many, however, commented frequently on, and geared their instruction to overcome, deficits that they perceived to be associated with low socioeconomic status and lack of experiential background.

However, the nature of the students in the classroom accounts for less of the variation in curriculum and instructional approaches than one might think. Classroom management is a case in point: while classroom demographics help explain some of the variation in the way teachers manage their classrooms, the obvious student characteristics--class size, ethnic and linguistic heterogeneity, degree of poverty, and mobility--do not tell the whole story.

- Class size. Although smoothly run classrooms tended to be on the small side--or have at least one aide for part of the day, thus reducing the pupil-teacher ratio--a few of the most effective managers also had more than 25 students.

- Ethnic and linguistic heterogeneity. Most of the dysfunctional classrooms, for example, were multiracial groups of more than 27 students. However, the most chaotic classroom of all was a single-race classroom that varied between 14 and 18 students during the year.

- Poverty level. There is a similar lack of correlation between poverty measures and management effectiveness. While the classrooms with the lowest levels of poverty (that is, less than 30% of the students on the Free-or-Reduced Lunch Program) tended to fall into the "well-managed" groupings, and none were dysfunctional, the 14 classrooms in which 100% of the children received free-or-reduced-price lunch were distributed fairly equally among all categories of management; four were in the "Expert Managers" group.

- Student mobility. The number of students entering and leaving classrooms also varied across all groups--classrooms with the highest mobility were not necessarily the most likely to experience management problems.

Homogeneity of classroom composition--by ethnicity or language background--was not necessarily an advantage for successful management. Only the all-white schools in one rural district had no classes that fell into the "dysfunctional" category (elsewhere, several all-white classrooms had a variety of management problems). At the same time, where classes were tracked by ability level (or where one teacher taught the two higher reading groups in a grade, for example) the higher groups tended to gravitate toward the Expert Managers category.

In many ways, the lack of influence of student factors on management patterns is counterintuitive. It is easy to assume, as some teachers do, that "the kids are the problem." There are still many instances where the nature of the classroom group predisposes teachers to adopt a particular approach to management. Moreover, there are other characteristics of the students in the classroom not reflected in the measures discussed above. The obstacles to academic learning experienced by poor families in a rural area are different from those encountered in a violent, inner-city neighborhood, and these factors, too had their effect on what was taught and how. For example, teachers were especially reluctant to assign homework in the inner-city schools primarily because they felt it would not get done.

The analysis of influences on classroom management parallels that involving the teaching of particular subject areas. Once again, it is easy to assume that the classrooms with lower levels of poverty and associated indicators of learning need would be more likely to exhibit departures from the conventional wisdom about instruction for disadvantaged students. Such was not the case:

- Classrooms with the largest number of opportunities for reading extended text had substantially higher levels of poverty overall.
- The most innovative mathematics curricula were found in both inner-city classrooms with 100% of the the children receiving free-or-reduced-price lunch and rural settings in which 40% or fewer of the students were from low-income backgrounds.
- Classrooms with a high degree of extended text writing had the same levels of poverty, on average, as classrooms in which little or no extended text writing was done.

There is no way to ignore the fact that classrooms with high proportions of low-SES students present teachers with special obstacles to be overcome--for example, language barriers, dysfunctional families, poverty, isolation, and substance abuse. But these obstacles do not appear to play as important a role in shaping curriculum and instruction than the kinds of factors discussed below regarding teachers and the school or district policy environments within which they operated. To their credit, the teachers in the most challenging settings did not give up because the problems seemed insurmountable. Understandably, some gravitated toward more routine, more structure, more skills-based instruction, and the path of least resistance--principally, it seemed, for their own psychic health. The result for children was a more restricted range of curriculum and learning opportunities.

Teachers' Preparation, Commitment, and Beliefs

In many ways the chief architect of the students' learning experience (though not necessarily of the curriculum), the teachers in sample classrooms approached their task with varying degrees of professional preparation, levels of commitment, and beliefs about what they were teaching. These attributes about the teacher form a web of influences that powerfully shaped the nature of what was taught and how it was taught.

Teacher Preparation and Professional Development

Not surprisingly, teachers who embarked on curricula and instructional approaches at variance with conventional wisdom were more likely to have had advanced training and to have had access to, and pursued, a wide range of in-service professional development opportunities. Reading teachers who provided their classes with extensive opportunities to read are a good example. According to the information provided to observers, teachers in the extensive-opportunity classrooms were more likely to hold a master's degree and participate in far more professional development activities than their peers in the other two groups. On the other hand, teachers in the restricted-opportunity group had slightly more years of experience, on average, as shown in Table VII-1.

Table VII-1

HOW PROFESSIONAL DEVELOPMENT AND EXPERIENCE ARE ASSOCIATED WITH OPPORTUNITIES TO READ

	Extensive Opportunity to Read	Moderate Opportunity to Read	Restricted Opportunity to Read
High professional development	67%	67%	23%
Master's degree	42%	25%	0%
Average years of experience	13	13	15

These statistics support two hypotheses emerging from our initial analysis of the classroom case reports. First, the teachers in the extensive-opportunity-to-read group (and to a lesser degree, those in the moderate-opportunity group) seemed to have a distinct sense of themselves as professionals. In spite of mandates from various sources, these teachers did not feel that they were being manipulated by an anonymous "system" over which they had no control. When new things were required of them, their instinct was to plunge in, learn as much as they could, and try. They did not assume that "policy" robbed them of autonomy over what and how to teach. Rather, they relied on their years of experience, their proven success in teaching children to read, and their common sense to tell them when something was working and when it wasn't.

In contrast, teachers in the restricted-opportunity-to-read group expressed feelings of being hampered or defeated by the "system." This group of teachers apparently felt that little of their professional existence was within their control. Coupling this sense of powerlessness with their greater average numbers of years in the classroom creates the second hypothesis: teachers in the restricted-opportunity-to-read classrooms were less satisfied with their jobs than their peers in the other two clusters.

There are, of course, many factors that contribute to a teacher's feeling of powerlessness, but at least it can be argued that participation in extensive professional development activities and graduate degree programs provides one kind of antidote. Begging the issue of whether or not all, or even most, inservice and other types of professional development activities are well executed, teachers do derive many ideas and new possibilities from almost any experience that puts them in contact with their peers.

On the other hand, teachers who are denied or who deny themselves such opportunities seem to seriously diminish their instructional repertoire and their general ability to cope with the stresses and frustrations of teaching children to read. Because their array of strategies is more limited, they have fewer fall-back positions to select from when things are not going well. As students' frustration or sense of failure mounts, so does the teacher's. The usual result is reversion to a more controlled, restrictive, skill-based, building-block approach to reading--and less opportunity to really read.

In mathematics, a parallel pattern pertained, only here the experience in professional development or teacher preparation programs (or lack thereof) seems linked even more clearly to sheer exposure to, and awareness, of alternatives approaches to curriculum and instruction. Most teachers in our sample (and indeed, nationwide) have not been exposed--at least, not in any intensive way--to alternative approaches to mathematics instruction. It is not surprising, then, that many teachers focus on arithmetic computation with little emphasis on underlying concepts. By contrast, teachers in classrooms that focused on conceptual understanding as well as arithmetic computation have typically sought out special training to improve their skills in teaching mathematics. The same cannot be said for the first group of teachers. For example, among teachers in the conceptually oriented group:

- One first-grade teacher enrolled in a graduate credit course on teaching mathematics. She was observed to make less and less use of the textbook as her confidence and knowledge about mathematics instruction grew.

- A third-grade teacher had attended workshops on mathematics put on by a state group.

- Two other first-grade teachers in one school, who had developed a mathematics curriculum combining textbook, manipulatives-based activities, and a conceptually-oriented mathematics program (DMP), described themselves as having participated in every mathematics workshop they could get to over the past 8 years.

Professional development opportunities are not always readily available, and so the pattern of teacher preparation we have just described reflects not only the individuals' drive to prepare themselves, but also the availability of training events in which this can happen. Nonetheless, as the examples above suggest, there is clear evidence that teachers in the kind of schools we are studying must want the professional development--in some instances, want it badly--before the requisite experiences begin to accumulate over time.

Personal Commitments to Teaching

Alongside the teachers' drive to secure appropriate training for themselves is their willingness to invest a considerable amount of personal energy, time, and even resources in teaching. Our initial analyses suggest that the teachers with curricular and instructional approaches at greatest variance from the norm have done so at some personal cost to themselves.

The pattern of personal investment in reading instruction illustrates the point.

- One veteran first-grade teacher commented that her husband had started to give her a hard time about the number of evenings and weekends she committed to preparation for teaching as she experimented with a whole-language approach to reading instruction. She also acknowledged spending "a small fortune" on professional books and periodicals.

- A third-grade teacher in another district looks on her class each year as the children that she and her husband (a retired school principal) never had. She "spoils" her classes with personal expenditures to enrich the classroom environment.

- Another teacher, although nearly burned out after over 30 years of teaching, is intent on exposing her students to as many experiences as possible. This year, in addition to many field trips to local cultural institutions, she directed her fifth graders in a production of Macbeth.

Teachers in these classrooms can be described as risk-takers. They are willing to try new things, but maintain a healthy skepticism until a new approach to reading instruction has proven itself. They do not seem to adhere slavishly to any particular school of thought on the best way to teach reading but rather develop their own eclectic styles that tend to be dynamic rather than static. In several of the classrooms in this group, teachers were spending their first year with a new literature-based basal reading series combined with top-down mandates to present the same material to all children; two others were voluntarily experimenting with greater use of trade books and an integrated approach to reading and writing.

Beliefs About The Subject Area and How to Teach It

Out of their professional development experiences, background knowledge, and formal preparation, teachers forge an image of the subject area they are teaching and how it should be conveyed to the students they are working with. These conceptions of the subject area and beliefs about how it should be taught appear to very strong among the teachers in our sample and have much to do with what transpires in their classrooms.

Beliefs about writing are the clearest case. We detected four basic conceptions of writing among the teachers we have been studying. The first two, which treat writing as a necessary tool for learning and as a means of communicating thoughts and ideas, are strongly associated with the pattern of instruction in classrooms offering frequent opportunities to write extended text. The third, which treats writing as a system of rules to be mastered, is closely linked to the pattern of instruction that prevails in classrooms where little or no extended writing is done. The fourth view, of writing as an outlet for self-expression, cuts across the groupings to some extent, but is not particularly prevalent in low-group classrooms.

The four views of writing are not mutually exclusive. Some teachers held more than one view, but no one held all four. In most cases, one view dominates a teacher's thinking and is subsequently expressed in the way he or she carries out the writing program.

- Writing as a Tool for Learning--A few of the teachers in our study view writing as a necessary tool for learning. For these teachers, writing provides a process that facilitates the individual's ability to clarify and organize his or her thoughts. In this view, writing is not an adjunct to other subject areas but a tool necessary to understand fully the content presented in any area of the curriculum. Accordingly, the teachers who articulate this belief integrate writing throughout the curriculum, especially in reading, social studies, and science. Their students experience a wide range of uses for writing--to solve problems, to develop and demonstrate understanding, to analyze data, and to justify one's opinion.

- Writing as a Means of Communication--Other teachers in our study view writing as a means of communication. Writing, reading, and oral communication are seen as the vehicles for the exchange of ideas, opinions, and feelings. Teachers holding this belief tend to focus on providing opportunities to students to communicate in writing and believe that the form of writing (the component skills) will be learned mainly through use of the language. In classrooms where teachers hold this view, writing is generally integrated with reading, although not necessarily with other subject areas; reading and writing are taught simultaneously and viewed as intertwined with one another. In this approach, there is less emphasis on teaching the component skills and more emphasis on students' use of language for expressing feelings, attitudes, and knowledge. Some teachers in classrooms offering moderate to extensive opportunities for writing text expressed this belief.

- Writing as a System of Rules--Many teachers in our study view writing as a system of rules that must be mastered before meaningful writing can occur. Almost all of these teachers taught classrooms in which little extended writing took place. This view places greater emphasis on the form of writing and less emphasis on the uses of writing. Although such teachers acknowledge communication as the ultimate purpose of writing, they interpret their goals as the teaching of the skills that enable communication to flow.

- Writing as an Outlet for Self-expression--Several teachers in the study view writing as an outlet for self-expression. They place less emphasis on communication with others and more on expression for oneself. Teachers in classes offering large or moderate numbers of opportunities for extended text writing expressed this view. One teacher states that writing is "therapy" for her students. Teachers who hold this view tend to maximize opportunities for personal writing--e.g., in journals or through letters to a friend.

These views of writing seem to be powerful predictors of the kind of opportunities that are provided students in the schools we are studying. Although external factors such as textbooks and district policy play an important role, as described below, there are nonetheless many ways for teachers to build writing into their academic program, regardless of the external constraints. Given the freedom, they appear likely to build and implement curriculum that is consistent with their view of writing.

In reading and mathematics, similar sets of beliefs about the subject area existed among the teachers in our sample, although their beliefs were less clearly formed and articulated. In mathematics, for example, many of the teachers appear to hold the belief, as indeed do most adults (probably including a majority of parents and even of principals), that arithmetic is and should be the dominant focus of elementary mathematics instruction, and that drill with routine exercises is a very appropriate way to teach arithmetic. This belief is associated with the prevalence of arithmetic-as-skills instruction.

With regard to reading, teachers in our sample held a number of views in common and did not display the extreme positions that are part of current debate about reading instruction. Virtually all the teachers on whom we concentrated the most intensive observations (half of the sample classrooms) believed that it is important (1) to teach children decoding skills of some kind that allow them to attack unfamiliar written material and (2) to engage their interest in, and understanding of, the written word through experiences with highly motivating text. Further, nearly all believe that a variety of instructional strategies should be employed to achieve these twin goals.

But the reading teachers we studied place different degrees of emphasis on skills versus reading for understanding, and the roots of their differences seem to lie in strong preconceptions about what the skill of reading consists of, derived from their own education or preparation for teaching (now in the dim past for some veterans). Thus, there were some strong phonics advocates among the teachers we worked with, particularly at the first-grade level. (Only one school in our sample mandated a phonics-based approach to reading and even it also offered a daily period of integrated language arts instruction.) Yet even the most ardent phonics proponents, for the most part, do not believe that children learn to read by phonics alone. They see knowledge of sound/symbol relationships as an essential tool that helps students become independent readers.

Interestingly, the most committed and successful "whole language" teachers in our sample incorporated some phonics into their reading instruction programs. As we noted in Chapter IV, the teachers who offered students extensive opportunities to read seemed far less defensive about the amalgam of strategies that they employed to bring children along in reading. If some phonics were indicated, then they did phonics lessons for a period of time. At the higher grade levels, the same was true for vocabulary development and word attack skills. No apologies were involved. These types of activities aimed at discrete skills were simply viewed as part of a sensible comprehensive reading program.

District and School Policy Constraints

Teachers' professional development, level of commitment, and beliefs about the subjects they were teaching were in part a reflection of powerful forces in the school and district environment within which they worked. From this environment came general curriculum policies, policies and guidelines that were particular to each subject area, textbook choices, the pressure of tests and accountability, and varying degrees and kinds of support for what teachers were doing. Each played an important role in shaping what was taught and how during the first year of our study.

Sometimes, these factors acted as constraints, limiting the vision or the resources of principals and teachers. For example, one district does not pay for copying machines in schools, thus requiring principals to spend large amounts of time and energy raising money for this purpose. This same district has nearly the lowest per-pupil expenditure in the state for instructional materials, so that students in the upper grades are not allowed to write in their "consumable" workbooks.

In other cases, school and district policies present opportunities to try practices believed to be more effective (even if only to satisfy a school, district, or state requirement), encouragement for experimentation (such as trying new or unusual curricula in magnet schools), or other kinds of help. As an example, teachers' use of a mathematics curriculum focusing on a broad array of topics occurred only in districts in which there was some encouragement, or mandate, for this to happen (often, but not always, originating at the state level). Virtually no teachers in the sample adopted such a curriculum in the absence of some kind of push from above.

Both positive and negative effects of school and district policies were encountered in the study. Further details are provided below.

General Features of Curriculum Policies

Every district that we are visiting sets curriculum policies on reading, writing, and mathematics instruction. However, there are important differences in the degree to which these policies detail exactly what is to be taught, the sequence in which it is taught, and even the timing in the school year. A consequence of the more prescriptive curricular policies appears to be a higher degree of fragmentation in the curriculum, which makes it harder for certain alternatives to conventional wisdom to take root. Besides the degree of specificity in the curriculum, there is an important issue of how the curricular policy came to be established and with what kind of participation from teachers, schools, and central office.

Curricular guidelines from the district's central office can be exceedingly detailed. In one district, reading curriculum is set out in two-week increments or units, each of which is accompanied by a test which must be mastered before the next unit is started. In stark contrast, another district fits all of its objectives for reading instruction across a year onto several xeroxed pages and leaves it to the teacher and school to determine how and when to reach the objectives. As might be expected, teachers in the former case feel more constrained than in the latter; it is probably not a coincidence that few of the teachers we studied in the former case were engaged in language arts teaching that deviated much from the discrete skills-oriented curriculum advocated by the central office.

Both the district's curricular decisions and the organization of instruction in the school affect the degree of cohesion or fragmentation in the curriculum as experienced by children. Especially evident in the teaching of language arts, some of the districts and schools in the study had devised an overall curriculum that either tries to do too much or subdivides what children must learn into too many discrete boxes. The result is the same--fragmentation of the school day into a series of unrelated segments. In some classrooms, no activity ever lasts more than 10 minutes; by definition, then, there is no extended reading, nor writing of extended text. In others, the daily and weekly reading instruction schedule is quixotic because so many other social and curricular goals have been inserted into a finite amount of time--drug education, clubs, assemblies, etc. The impression children get is that learning to read is of equal importance to talking with Officer Friendly about bicycle safety.

There appear to be some distinct differences among the districts on the way that curricular policies came to be, ranging from central office fiat to participatory planning involving many classroom teachers. Research has demonstrated quite definitively that teacher "ownership" of an innovation (or policy) improves its chances of being implemented. The experiences of districts in our sample that are in the process of implementing a change to more integration of reading, writing, and other aspects of language arts corroborate this finding.

In one district, this policy change occurred by fiat. Most teachers in this district are straining to understand what is now expected of them; many had given up halfway into the first implementation year. In two other quite disparate districts (one urban, one rural), planning for major curricular change in language arts has been both a much longer process and includes much more participation of classroom teachers. Several teachers in one of these districts told us that they felt personal responsibility for the new language arts curriculum. The other district has set up a 5-year plan for implementing an integrated language arts curriculum. Teachers have some choice about when they will begin to change their curriculum and instruction and how quickly they will proceed. In both these instances, the decision to revise the district's approach to reading instruction came from the top. However, because the means to the end have been more participatory and more realistic, with more attention to the research and theory behind the change, teachers in these two districts seem to have more investment in seeing it succeed.

Policies and Guidelines Particular to Each Subject Area

Aside from the general features of curricular policy and how it was arrived at, there are specific expectations about the content of mathematics, reading, and writing instruction embedded in the curricular policies or guidelines that affect teachers' work. As the earlier discussion of teacher characteristics implied, not all teachers heed such policies in the same way, but the very existence of the guidelines is in most instances we have been studying a major feature of the teachers' landscape.

Policies on the Organization of Reading Instruction--The ways in which children are assigned to classrooms and grouped (or not grouped) within classrooms for reading instruction appears to be less of a district level policy issue than a decision made at the school (or sometimes the classroom) level. Several districts, of course, had mandated heterogeneous classroom assignments and whole group reading instruction using grade-level materials in an effort to do away with tracking. However, in many cases, the rigidity with which such mandates are carried out is a function of the teacher's sense of professional autonomy. We heard no stories of teachers being reprimanded because they chose to continue their use of small groups for some of their reading instruction time.

Some schools departmentalize their reading instruction--sometimes at a single grade level and sometimes across several grades. The purpose of this school-level policy is to group students homogeneously for reading, although not necessarily for other subjects. Teachers can then either teach a whole group who read at approximately the same level or further subdivide as they think best. In some cases, this policy contributes to serious fragmentation of the school day and to significant loss of instructional time as a result of the transitions.

Individual schools have many idiosyncratic ways of establishing classroom groups.

- Two schools, for example, have a tradition whereby one teacher at a grade level takes the highest- and lowest-achieving students and the other teacher takes the middle. In the succeeding year, they switch assignments. The legitimacy of achievement groupings is not being seriously questioned in this district.
- Another school employs a rather unique organizational scheme. Half the children in the school arrive at 8:30 a.m. for an hour of reading instruction and the other half stay an hour later in the afternoon. During the middle portion of the day, teachers engage the whole group in additional reading and language arts instruction. In theory, this arrangement offers many benefits to both teachers and students. It incorporates the essence of the whole group philosophy while specifically legislating a time for teachers to keep closer watch over how individual children are doing. Because the school is coping with so many problems, however, this unusual strategy is not being used to its full potential.

Policies Governing Writing Curriculum--Unlike reading, guidelines or policies for the teaching of writing are not likely to address issues such as grouping within or across classes. The most significant policy is simply the assertion that writing must be taught, and along with that, what kinds of writing students are expected to master at what level. One of the six districts we studied places very little emphasis on writing instruction; here, this aspect of language arts is viewed as an extra, to be included if reading skills are being mastered at a reasonable rate. More often than not, writing is ignored in the classrooms from this district we have been visiting. At the other extreme, are several districts that not only expect writing to be taught in every grade (including the first grade) but specify nine genres of writing that students are expected to be familiar with by the time they reach sixth grade. It is little surprise that classrooms in these schools show signs of considerable writing activity--for example, walls are typically covered with students' written work, which changes as the year goes on. Although many other factors contribute to this pattern, the simple fact that the district insists that writing has high priority in the language arts curriculum (not a foregone conclusion in American elementary schools) has a clear impact on classroom practice.

Policies Governing Mathematics Curriculum--School and district policies affect what is taught in mathematics in a different way. In the sample classrooms, the most powerful influences are the textbook, testing, and state frameworks, all three of which will be discussed later in this chapter. But independent of these factors, specific curricular decisions with important implications for the classroom can be made at school or district level, most dramatically illustrated by the one school which has been designated as a mathematics and science magnet program. There, the alternative approach to mathematics instruction that is evident in these classrooms is in large part due to the influence of district and school policies regarding the organization of the school program, its academic emphasis, the materials used, and the assignment of staff to the school and subject-area teaching. The availability of more time each day for mathematics instruction, the choice of an unusual, alternative textbook series (DMP), and the schoolwide emphasis on higher-order thinking skills are each examples of policies adopted at the school or district level, rather than by the individual teachers.

Textbook Choices

Textbook choices go hand in hand with overall curricular decisions, and are typically the province of the central district office, though there are some cases in our sample in which textbook choices were made at the school level. As noted above and in earlier chapters, textbooks have an important role to play in each of the subject areas, especially in mathematics. In that subject, the conception of mathematics implicit in the textbook is usually the one our teachers adopt in their own instruction; most follow the textbook closely.

The situation isn't all that different in language arts though teachers in the sample classrooms are somewhat more willing, on average, to depart from basal readers than from their mathematics textbooks. In writing, they tend to be freer still of the dictates of the writing assignments contained in language arts textbooks. However, the influence of the language arts textbook depends in part upon school or district policy about its use. In some of the schools, teachers are required to use a specific textbook following a certain approach to teaching writing. In other schools, a textbook is available, but teachers can choose to use the book or to develop their own curriculum. Nonetheless, teachers who have strong views about the teaching of writing tend to find ways "to work around" the curriculum presented in the textbook, if it does not conform to their thinking. We found this situation across all three groups of teachers: some of the teachers in the classes in which little extended writing is done and who are wedded to a view of writing as a system of rules chose to ignore or supplement a textbook that advocates an approach to writing based on whole language principles. Similarly, in many classrooms offering students many opportunities for extended writing, teachers do not use the textbook designated by their school or district, believing that they can provide richer writing opportunities for their students in ways not presented in the textbook.

The choice of textbooks by school or district does little by itself to make up for teachers' lack of experience with the approach contained in a textbook. For example, in many of the classrooms we are studying, teachers are using for the first time a new textbook series based on the integration of reading and writing. Most are trying to follow the textbook, but many feel unsure of themselves and are approaching the textbook's writing lessons selectively and in a more limited way than was intended by the textbook authors.

Testing and Accountability Pressures

Testing of various kinds is an ever-present feature of the classrooms we are studying, and in many ways this fact influences both the content of, and approach to, teaching. The pattern is especially clear in the case of mathematics and writing.

The effects of testing pressure are most dramatically seen in one district we are studying. For example, nearly all the mathematics classrooms from this district emphasize arithmetic skills only in mathematics instruction; the few that do more in mathematics lessons still stick closely to arithmetic, and do not add to it other mathematical topics or skill areas. This very large, poor, high-crime district has a top-down approach to instruction, which stresses the frequent use of criterion-referenced tests (CRTs); in mathematics, these focus particularly on students' arithmetic computation skills. Certain instructional policies are mandated by the district, such as the requirement that teachers "pretest" each chapter of the mathematics textbook (which, itself, is centrally selected by the district). Taken as a whole, the district policies seem to be "successful" in shaping teachers' views of mathematics teaching and learning. Unfortunately, the vision of mathematics instruction embodied in these policies is a restricted one.

In districts with a broader view of mathematics, teachers felt less pressure from tests, and a number of them took advantage of their perceived freedom in designing less conventional approaches to the mathematics they were teaching. These teachers did not seem as often to perceive pressure that their students perform well on standardized tests which emphasize proficiency in arithmetic computation. To be sure, there was some pressure, but it was far less common. Often, the effect of standardized testing on classroom instruction was negative, as the following examples illustrate:

- Senior faculty in one school (which is in a "problem area" of the city) place great emphasis on test scores, because they hope to increase the status of the school by raising its test scores. As a result, there is an emphasis on "covering" the textbook, at the expense of mastery.

- Large amounts of time in a school in another state are spent on test preparation. The tests include not only state-mandated standardized tests, but also three separate administrations each year of the district's own criterion-referenced tests (CRTs).
- A well-prepared mathematics teacher in another school in that district sticks to the curriculum in a very rigid fashion. She understands that the CRTs are tied to material that she is supposed to teach, and if she doesn't cover the material then she will be held responsible for her students' poor performance.

It is true that there are state and district tests that matter for most of the teachers who teach a wide range of mathematical topics and emphasize conceptual understanding of mathematics. But somehow the pressures on teachers seem less. Precisely why this is so is not entirely clear from the available data. One reason may be that in one state, the state proficiency test in mathematics uses the school as the principal unit of analysis. By contrast, in the district with the greatest degree of test pressure (which is located in another state), the unit of analysis is the classroom. In fact, individual teachers are very aware that the principal--and even the district's powerful central office--perceive test scores as an indicator of teacher performance.

With regard to writing, district testing policies exert a similar kind of influence, except that there seems to be a more pervasive pattern of teaching to the test. On the one hand, districts in which the testing package aims most directly at discrete writing skills encourage that aspect of the language arts instruction to the exclusion or diminution of instruction in composing extended text:

- In the above-mentioned case of heavy testing in mathematics, students' mastery of language mechanics skills is also tested on a regular schedule. Not surprisingly, teachers teach these skills and, for the most part, ignore instruction involving extended writing tasks.
- In another district, which uses the California Test of Basic Skills, teachers devote considerable time in late winter and early spring to preparing students for the multiple-choice language arts section of that test, and decrease their attention to extended writing for several months' time.

On the other hand, testing programs that also assess writing holistically--that is, through samples of extended text writing--appear to encourage that kind of writing curriculum. Three of the districts in our sample are in a state which has established a writing assessment program of this sort. Using matrix sampling, several different types of writing prompts are given to students within the same classroom; thus, teachers feel the pressure to give their students writing tasks relevant to each of these writing types. The writing assessment program has been in place for a few years at the secondary level, but will begin soon at the sixth grade level. Teachers in some of our sample schools are beginning to gear their instruction toward this fact.

One must keep in mind that testing is not the only influence on what is taught in mathematics, writing, or any area of the curriculum for that matter. Rather, a complex interaction occurs between (1) what the tests cover and how frequently they are administered, (2) the incentives or consequences attached to the test results and to which unit (teacher, school, district), (3) how closely tests are aligned with what the district or schools sets as curriculum, and (4) and how effectively schools or individuals are able to resist or counteract the inevitable pressures from the testing situation.

The feeling of powerlessness described earlier often manifests itself in situations where testing pressure is high. In some instances, teachers who stress arithmetic computation, for example, believe that they are torn between conflicting goals. One fifth-grade teacher perceived that the district policies, as well as the textbook itself, put a very high priority on computational skills. In addition, she believes that this is what is tested, saying to one of the researchers as the year progressed that, "I dread how they are going to do on the CAT in a couple of weeks." Thus, while she wanted to focus more on conceptual understanding (and even sought help from a district supervisor who arranged for her to attend an inservice session on the use of manipulatives), she felt an uncomfortable pressure, underscored by testing, to focus her efforts on arithmetic computation skills.

District and School Support

Teachers are--or can be--supported in their efforts to cope with the demands of their teaching assignments in several ways. Peers offer a first level of support, and in a variety of informal ways, the teachers in our sample use their colleagues as a source of advice, consolation, materials, troubleshooting, and curricular direction. Occasionally, the relationship is formalized as in the case of the teacher pairings within one school, through which teachers in the same grade level are given coordinated schedules and encouraged to plan and develop curriculum together (many pairs had taken good advantage of this opportunity). Of course, peer "support" can both encourage and discourage departures from conventional wisdom, and on more than one occasion, we heard staff-room commentary that subtly undercut the intentions of new curricula that were in the process of being adopted.

The school as a whole offers a second level of support, especially through the actions of the principal. As noted in Chapter 1, the principals in the sample schools vary a great deal in their approach to guiding instruction and managing the operation of their schools. The strongest principals offered both a clear sense of direction to teachers and a buffer against external pressures (testing included) to teach something else, as in the following instances:

- In one district that insisted on a new whole language-oriented curriculum in reading, the principal of one school we are studying adamantly refused to allow her teachers to abandon a strictly phonics-based approach.
- In another school in a different district, the principal encouraged alternative approaches to language arts teaching among some faculty by telling them that it was unimportant whether the children scored high on standardized tests emphasizing discrete basic skills.

In other cases, principals did not see instructional guidance or buffering as part of their role, and as a consequence, teachers were more on their own.

Districts provide a third level of support in principle, and we found many cases in which the kind of support offered--or the lack of it--had a key role in shaping academic instruction in the classroom. We have already described in Chapter IV a situation where the district purchased too few literature-based textbooks for each child to have a copy, thus essentially negating the whole premise underlying development of these readers--to give children experience reading authentic text. We learned of other instances where new instructional strategies--e.g., cooperative learning, whole group instruction--were mandated with little or no training that would familiarize teachers with either the theory or appropriate techniques for introducing them into classrooms. Other districts had the resources and the skill to provide teachers with a good deal of inservice support and most teachers seemed to take advantage of these opportunities. This seemed to increase their comfort level with new materials and approaches.

VIII EMERGING THEMES AND UNFINISHED BUSINESS

We are now in a position to reflect on what we have learned so far and what remains to be done in the second year of the study. In this concluding chapter, we look across what has been presented earlier in the report and extract from it major themes implied by our findings, as well as issues that have not been sufficiently explored.

Major Themes from the Study's First Year

We set out to study naturally occurring alternatives to a conventional wisdom advocating teacher-directed, basic-skills-oriented approaches to curriculum and instruction. At the risk of stating the obvious, we have established several key points regarding alternative approaches to mathematics and literacy.

First, there are a number of alternatives being tried out in schools serving large numbers of poor children. Alternative approaches are alive and well in schools facing the most adverse conditions of poverty and school setting, as well as in schools with less pressing problems. That is not to say that it is equally easy to install a literature-based reading program or extended-text writing program in both kinds of settings. Our data suggest otherwise--adverse conditions make teaching more difficult, no matter what one wishes to do--but the possibility exits, regardless of the setting. Exciting alternatives are possible in the hardest-hit inner-city settings as well as in less impacted suburban or rural settings. (We note that we selected classrooms, in part, for variation in approach; however, the point is that the variation existed within schools to begin with.)

At the same time, we do not mean to imply that all or most classrooms within the schools we are studying are engaged in alternative approaches to academic instruction. A good deal of what we observed conforms to the profile of conventional wisdom teaching reviewed in the Introduction--some of it engagingly and imaginatively done, some of it tedious, limiting, and narrowly focused. While we do not doubt that many classrooms in our sample are doing a reasonably good, even excellent, job of teaching children the kinds of "basic" skills that show up well on standardized tests, much of the teaching we encountered gave students little room to develop analytic abilities or other forms of advanced intellectual skill. To be fair to the teachers we observed, academic goals of any kind were not always the primary aim of classroom instruction; we observed some classrooms in which the most important goal was simply coping with basic human needs. For example, one teacher wished out loud that the school or district administration would do more to deal with the social services her students needed so she wouldn't have to spend so many afternoons on the phone, not to mention classroom time, dealing with these needs herself.

Second, naturally occurring alternative approaches typically represent modest, incremental departures from conventional practice, not fundamental shifts in practice. We encountered relatively few classrooms that had opted for very different or highly experimental approaches, or that followed reform gospels to the letter. "Whole-language"-based teaching of reading and writing is a case in point. Virtually none of the 85 classrooms we studied exemplified whole-language teaching in its pure form, but many were engaged in literacy teaching that showed the influence of some or many whole-language principles. Reading, writing, and other subject areas were often integrated with one another; "authentic" literature (as it appears in trade books not specifically prepared for school) often was used as a supplement to a basal series, or occasionally replaced it entirely. But teachers had not yet taken the leap of faith and practice required to abandon the structure of a basal series and rely on fluid, student-motivated interactions with language and literature as the base for acquiring literacy.

Most often, we saw hybrids in which some traditional elements and some nonconventional ones were blended, as in the case of one third-grade mathematics class, which regularly combined rote drill on computational skills with conceptually oriented teaching of arithmetic skills and open-ended problem-solving activities done in cooperative learning groups. The three strands received almost equal weight in the teacher's planning and actual instruction; she believed all were an essential part of the mathematics her children were to learn.

Among the sample classrooms, there are a few in which fundamental shifts in approach are evident. This is the case in mathematics more than in language arts. For example, in some of the classrooms we are studying, students are required to do much more thinking than is typical of mathematics classrooms nationwide and must work with a wide range of mathematical topics outside of arithmetic. These classrooms approach the profile of desirable mathematics instruction presented in such documents as the NCTM Standards for Curriculum and Evaluation.

Third, there are recognizable types or patterns of practice that distinguish groups of classrooms in terms of the way they approach mathematics, reading, and writing--and even the management of classrooms--in the kind of schools we are studying. Thus, different features of curriculum and instruction "hang together" rather than combining in an endless series of permutations across classrooms. For example, classrooms in which a large amount of extended writing is done are also those that tend to integrate writing with other subjects and that deemphasize teaching the component skills of writing. Classrooms that emphasize conceptual understanding of mathematics as well as arithmetic skills are simultaneously likely to make heavier use of manipulatives and are less reliant on textbooks than classes that focus on arithmetic skills only. This kind of grouping of instructional features should not be surprising--there is a logic to the combining of elements that reinforce each other in a larger whole.

Fourth, the school, district, and state policy environment is powerful both as a stimulus to alternative approaches and as an inhibiting factor. Even though we have not focused our first-year data collection or analysis on environmental effects, certain patterns have jumped out at us.

State frameworks, requirements, and testing policies are a motivating force for the adoption of alternatives. For example, in the state that urges districts to expose children to a wide variety of text writing, and tests schools accordingly, teachers tend to submit to this pressure and, in varying degrees, make writing a high priority. Teachers in the other two study states are under no such pressure and, on average, are much less likely to emphasize writing, unless the district makes a point of promoting this area of the curriculum.

District-level curricular decisions and testing policies are also influential (and act as a mediating force between state and school). Several of our districts project a strong presence in school and even classroom affairs; in several cases, certain changes in practice have been attempted in a large number of classrooms as a result (e.g., whole-group teaching arrangements); in one case, the strong district presence appears to stifle teachers' attempts at alternative approaches. Textbook adoptions--generally a district-level decision--influence practice in a similar way and are most clearly seen in the widespread use of literary readers and new mathematics textbooks. Not all of the six districts in our study try to play a directive role in instructional or curricular matters, but in those that do, the district leaves an unmistakable stamp on classroom practice.

Independent of state and district, schools as a whole shape the curriculum and instructional practice of teachers in several ways. For one thing, some of the sample schools provide a more positive, supportive environment for teaching than others (it is also possible that, over time, these schools have attracted a higher-calibre teaching staff, which probably reinforces the positive climate of the school). In such settings, it is easier, safer, and more rewarding to attempt to change practices along the lines we have described in this report. The opposite is true in schools in which the professional climate is tense and nonsupportive. In such circumstances, it is only natural for teachers to settle for what is most familiar and most able to keep things under control.

The relationships among staff members in a school affect the amount and kind of coordination between regular and supplemental instruction, with consequences for the coherence of students' instructional programs. In making choices about the responsibilities of supplemental staff, principals and program coordinators can ease or impede cooperation between these staff members and classroom teachers. For example, they can encourage or mandate joint planning periods to promote cooperation. On the other hand, if they often give noninstructional assignments to aides, they can disrupt continuity in the supplemental programs that employ the aides.

Schools can also shape the specific curriculum and instructional approaches teachers adopt. In one of the study schools, the principal of which is a member of the district's writing curriculum committee, a great deal of writing was done in all six sample classrooms. Teachers remarked about the amount of prewriting they all do, as evidence that they do indeed teach writing as a process. Although not officially part of its charter, the school is known for its language arts program--the study results bear out this reputation. In another district, one of the study schools has been designated by the district as a mathematics and science magnet program (although it still serves primarily an inner-city, neighborhood-based population). Accordingly, it has arranged a high-powered and far-reaching mathematics program that appears in all of the study classrooms.

School effects occur in one further way: the school (i.e., the principal) translates and interprets external mandates to the classroom, and in so doing often changes the mandates. This is most clearly seen where principals exert strong leadership. The implications for the adoption of alternative teaching approaches can be substantial, as in the case of one school in a district promoting a whole-language-based reading program. The school's principal, who believes deeply in the value of phonics-based approaches to reading instruction, told her teachers to pay little attention to the district's guidelines; most heeded her wishes. Although this is an extreme case, there are numerous examples in our data of similar school-level effects.

Issues That Have Not Been Fully Explored

There are several important issues that we have yet to examine fully, due primarily to limitations on first-year data and time for analysis at this stage. There is, first of all, the question of outcomes: what learning outcomes are associated with the different patterns of academic instruction? What explains the differences among classrooms? In addition, there are other issues that deserve fuller treatment:

(1) How teachers respond to new ideas that gain currency in professional or policymaking circles and how schools and districts support the efforts of teachers to change their practice.

(2) What makes curriculum and instruction work for particular groups of students, especially those who are culturally or linguistically different from the mainstream of the student population.

(3) How supplemental instruction reinforces or alters the academic instruction offered children who participate in special programs.

Besides issues such as these, which cut across subject areas, there is more to be learned about curriculum and instruction in mathematics, reading, and writing and what makes it work in the kinds of schools we are studying.

The Question of Outcomes

As pointed out in the introduction, this interim report does not deal with the outcomes of instruction. Various analyses of outcomes will be presented in subsequent reporting and are of critical importance to understanding the academic instruction offered the children of poverty. The descriptive portrait of curriculum and instruction offered in this report answers the questions: What is taught? How is it taught? What accounts for the pattern of instruction? But the questions--what is learned? how effectively do different approaches to instruction achieve academic learning goals?--have not been addressed yet.

The study is employing a series of outcome measures that capture the skills on which the study is focusing--the ability to read with understanding, use mathematical concepts effectively and thoughtfully, and write text that communicates effectively with a variety of audiences. Measures include both conventional standardized testing (where appropriate) and alternative forms of testing or assessment:

- Reading Measures: The reading comprehension subtest of the Comprehensive Test of Basic Skills (CTBS Version 4), and for younger children (first and third graders) an individually administered test of reading comprehension and discrete reading skills (the Woodcock Language Proficiency Inventory).
- Writing Measures: A writing sample scored holistically for overall writing proficiency and for mechanical correctness (this assessment procedure was developed by members of the study tam, based on writing assessment procedures now in use in several state assessment programs).
- Mathematics Measures: The computation and concepts-and-applications subtest of the Comprehensive Test of Basic Skills (CTBS Version 4); for third and fifth graders, a test of problem-solving ability based on University of Wisconsin "superitems."

These measures do not cover the full range of outcomes that are relevant to academic learning--for example, we are not measuring effects on students' attitudes about mathematics, which is widely agreed to be an important goal of mathematics instruction. Nonetheless, we are tapping outcomes that are central to instruction in each subject area.

Teachers' Response to New Ideas and the Process of Change

The study is taking place at a time when big and powerful ideas are "in the wind," not only because professional groups around the country are paying a great deal of attention to them, but also because states and districts have picked up these ideas and translated them into terms that affect the classroom. Several of these ideas motivate this study, among them:

- Teaching for meaning. A broad professional consensus is developing across subject areas that curriculum and instruction should be oriented toward understanding, reasoning, and analytic abilities--hence, a greater emphasis on writing as meaningful communication, reading for deeper comprehension of text, and conceptually oriented mathematics.

- Avoiding differentiation by ability. In the wake of reform efforts aimed at pursuing excellence has come increasing attention to the gap between high- and low-performing children. Approaches that deemphasize fixed differentiation by ability--e.g., cooperative learning, short-term tutoring interventions, and even increased use of whole-class instruction--are widely viewed as attractive alternatives.

The teachers in our study know that these ideas are being talked about and they are increasingly having to respond to them because the school, district, or state has enshrined the ideas in new directives, curriculum guidelines, or whatever. Also, independent of external pressures, the teachers are mostly aware through contact with their peers, journals, or conferences that these ideas are a "good thing" and might bring better results in their classrooms. How do teachers respond?

A preliminary analysis of this year's data suggests four types of response to a new, highly-touted change in practice:

- Ignore it. Either because it feels too difficult or too contrary to their beliefs about good teaching, some teachers simply pay no attention. Sometimes this takes the courage of one's convictions, especially when external pressures for change are strong.

- Implement it mechanically. Other teachers simply force the change into existing routine, without considering how or whether it fits. In some of our classrooms, for example, students form "cooperative learning groups" (groups of mixed abilities) at a command from the teacher, and then proceed to do what is essentially an individual seatwork assignment, with low-ability children copying from their more proficient groupmates.

- Implement it partially. Many other understand and cautiously endorse what the change calls for and are willing to give some room for it within the curriculum, but often alongside other academic activities that may run counter to it--as in first-grade classrooms that permit inventive spelling for some written assignments and busily correct every spelling error in others.

- Plunge in and invent a way to make it happen. Finally, some teachers--an adventurous minority--adopt the new way of doing things wholeheartedly, or create a version of it that fits their circumstances. Their efforts are not always successful, but failures do not occur for want of trying.

These different responses obviously reflect initial differences among teachers--in beliefs about good teaching, a sense of security about what they can do, a propensity to experiment, or whatever. But the pattern is not static; rather, it evolves over time in a slow process of change that involves small steps forward--and backward. We have begun to learn about that process and have been afforded an ideal chance to continue learning because nearly half of the classrooms we are studying were embarking on a new language-arts curriculum during the first year of the study, and a smaller proportion were in the first year or two of a new mathematics program. Others will be adopting new programs in the second year.

Across the 2 years of the study, we will have the opportunity to watch the way teachers respond over time to these changes and also to note the ways schools do and don't support these changes in practice. We know from this year that staff development, for example, is crucial in the change process, but we have yet to examine closely how teachers have participated in, and benefited from, professional development experiences that further the change process.

What Makes Curriculum Work for Particular Groups of Students

So far, our analyses have focused on classrooms as an intact group and at that level we have identified curriculum, instructional approaches, and management practices that appear to facilitate learning in aggregate. What is more, we have noted the characteristics of classrooms as a whole--what percentage are from poor families, what mixture of ethnic or linguistic groups compose the group, and so on. But we have not delved deeply into the ways that particular groups of students, who often appear as subgroups within a classroom, are taught and how their learning is affected.

Three overlapping subgroups are of particular interest:

- Low-achieving children in general, who are typically the ones participating in programs such as Chapter 1.
- Members of nonmainstream racial and ethnic groups--especially black and Hispanic children, who have historically been least well served by the kinds of schools we are studying.
- Linguistic-minority children, who come to school with an inadequate grasp of English.

Themes and impressions have begun to emerge from our data that serve as starting points for further work, which will require more targeted observation and analysis in the second year.

First, it is plain that all three groups are at risk of being marginalized or forgotten in many of the classrooms we are studying. One clear casualty of poorly resolved management issues, for example, is groups of black or Hispanic boys in some of the sample classrooms. But even in well-managed rooms, the children who are most different from the others in terms of ability, language, or cultural background pose a major challenge to the teacher, and not all recognize or rise to meet this challenge successfully. How the successful teachers accomplish this--and where the others miss the mark--bears more careful study than we have managed during the first year.

Second, various adaptations for children with limited English proficiency are being tried and appear to have promise. Although the number of classrooms in our study with such children is small, they span a wide range of approaches to the problem, including several that are taught bilingually to others that offer several forms of specialized help or curricular adaptation. The most interesting and complex cases are those in which more than one language group (other than English) is found in the classroom (a situation that is increasingly prevalent in high-poverty schools). All these situations are best looked at in multiple-year time perspective, as we follow children from first-year classes into those in the second year.

Finally, we do not know enough yet about how curriculum and instruction connects with children's background and with their cultural or personal lives outside of school, a theme that was prominent in our review of literature at the beginning of the study. Some evidence from the first year hints at the importance of these connections. In the classrooms where large amounts of extended writing are done, prewriting activities often draw on or build on children's out-of-school lives; classes in which children have many opportunities to read are given more chances to discuss and explore the meaning (including personal meanings) of the material they have been reading. In theory, children for whom the school is a foreign, even alien, place would need more help seeing how to build school knowledge into a base of personal and cultural knowledge. But how can schools best do that? And how to balance the effect to connect with the world outside of school and the need to expose these children to ideas, language, and activities that are not part of their world? The second year of study will help us pursue these questions more deeply than we have so far.

The Role of Supplemental Instruction in the Overall Academic Program

So far, we have been able to describe various configurations of supplemental instruction and to identify, in generic terms, the different roles they play in the instructional program (seatwork help, advanced work, specialized remedial help, etc.). The picture that emerges is one of considerable complexity, given the wide variation in special program arrangements across the study schools and classrooms.

But, as pointed out in Chapter VI, we have not yet pinned down the precise contribution of supplemental instruction to the overall mix of content and teaching approaches that comprises the academic program. What are students being taught by whom in the various supplemental arrangements that exist in these schools? How is the instruction carried out and how do the activities of the second (or third) instructor reinforce, contradict, or alter what children encounter with their regular homeroom teachers? How do teachers, schools, and district program offices orchestrate the relationship between regular and supplemental instruction so the two are maximally helpful to each other?

We have partial answers to these questions, as described in Chapter VI, but our base of information from the first year, especially based in observation of supplemental instruction, is weak. It will be important to develop a better set of answers in the second year.

What the Final Report Will Include

The final report will reflect on what has been learned from both years of data collection and all relevant data sources. In many ways, it will subsume and expand on what is presented here in the interim report, in addition to considering areas not yet dealt with at this stage.

There are three major goals for the final report:

(1) Elaborate on the Description of Academic Instruction--In addition to describing mathematics, reading, and writing instruction in more detail than appears in the interim report, we will examine how instruction in the three subject areas connects (or doesn't) across the school day; incorporates what we learn about instruction in the three remaining grades (second, fourth, and sixth), noting continuities and disjunctures across all six grades; and subject areas (e.g., homework, the use of extended discussion, approaches to student feedback and accountability).

(2) Explore the Relationships Between Outcomes and Patterns of Academic Instruction--As noted above, the final report will include analyses of outcomes in relation to curriculum and instruction--within-year outcomes for all students in sample classrooms selected for Year 2, 12-month and 2-year outcome patterns.

(3) Address Related Issues--The final report will also examine the issues not covered, or only touched on, in the interim report: new teachers' response to alternative approaches; the contribution of supplemental instruction in the classroom; and the differential treatment of particular groups in the classroom.

Related to the discussion in all of the areas covered by the final report will be a more extended treatment of the role played by school, district, and state in shaping what is taught, and how, in the classrooms under study.

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Appendix A

METHODOLOGICAL NOTES

Appendix A

METHODOLOGICAL NOTES

Data Collection Strategy

The strategy for data collection allowed us to investigate curriculum and instruction at several different levels. At one level, we have attempted to study the whole year's curriculum, as enacted in the sample classrooms. Our information about the whole year's curriculum, derived from interviews, teacher logs, and examination of syllabi or materials, has necessarily been somewhat superficial; we were simply unable to make a detailed record of everything that is taught across a nine-month period, nor would it necessarily serve the study purposes to do so. Nonetheless, by interviewing teachers periodically across the year, supplemented by what teachers told us on brief daily logs, we developed an overview of the enacted curriculum across the year.

At a second level, we examined curriculum in greater detail during selected two-week time periods. Often, these periods coincided with defined instructional "units" (however teachers define the primary "units" of work across the year); in other instances, teachers were simply pursuing a course of instruction, from which we studied a two-week sample. We examined one two-week period in each of the major time blocks across the school year--fall, winter, spring. The data we collected about these time periods derived from interviews, teacher logs, examination of materials or unit plans, and from a descriptive writing sample collected at the end of the data period. These sources permitted a more detailed description of what is taught and (to a limited extent) the instructional strategies used.

A third level of data collection was necessary to get a concrete picture of the actual content of instruction and the way academic instruction takes place in classrooms. Within each of the two-week periods, we selected several sequential days in which we observed instruction; to the extent that we could do so, days were chosen to represent the central teaching and learning activities of the time period (testing days or review days, for example, would be poor choices for observation). Our observations were directed at both the whole classroom and selected target students within the classroom. By combining observational data with what we learned from "debriefing" interviews with the teachers (e.g., after each lesson), examination of the materials in use during the observed lessons, and interviews with target students, we were able to capture in considerable detail how teachers conducted instruction and how students responded to it.

The third level of data collection required too many research resources to be carried out in all 84 classrooms. We therefore did more intensive observation in one of the two classrooms per grade; thus, a total of 42 classrooms were studied intensively. The other classroom per grade in each school was observed on several occasions, but not on sequential days and primarily as a means of corroborating interview and teacher log data.

Sample Construction

The sample was constructed by examining prior year (1988-89) test score and demographic data for all school districts lying within a commutable distance (approximately 50 miles) of the three study team "home bases" (Washington, DC; Cincinnati, OH; San Francisco, CA). All districts with high overall levels of poverty (as indicated by Orshansky percentile) were examined closely to determine which elementary schools within them (a) served students 50% or more of whom came from low-income backgrounds, and (b) performed better than average compared to other schools serving comparable populations (we also noted schools with average test scores exceeding statewide averages for all schools). Six districts with large numbers of candidate schools and which contrasted on key contextual factors (urbanicity, ethnic/racial diversity) were contacted to secure access. Once that was accomplished, the final stage of school selection was undertaken in consultation with district officials.

The final set of fifteen schools were chosen based on the following criteria:

- Contrast in student populations served: Student populations include relatively homogeneous populations (e.g., all white or all black students, 100% from low-income backgrounds) and diverse populations (e.g., with different mixtures of white, black, Hispanic, and/or Asian children and differing percentages from low-income backgrounds).
- Academic performance level in the prior year. Schools' average test scores ranged from above average in an absolute sense (e.g., above the 70th percentile) to the low end of the second quartile (approximately the 30th percentile nationwide).
- Contrasting organization and special program emphasis. The schools included two year-round schools, and several with magnet programs, among other special programmatic features.
- Willingness of the district, school, and school staff to participate in the study.

Eighty-four classrooms within these schools were selected for the first year of the investigation, in consultation with the principal, from among the first, third, and fifth grades using criteria described in Chapter I of this report. Choices were heavily constrained by the small number of teachers per grade (we were selecting two per grade, and in some schools there were only two) and by our desire to exclude dysfunctional teachers and first-year teachers. In a few instances, we were unable to find more than one teacher per grade.

Measures

Quantitative measures came from three primary sources:

- Student rosters/background data--The school or the classroom teachers themselves provided information on student ethnicity, participation in supplemental programs, receipt of free-or-reduced lunch, etc.
- Teacher logs--Regular classroom teachers in the study sample kept daily logs of instructional activities in mathematics, reading, writing, and other language arts, using a structured form provided by SRI (see Appendix B). Log forms were filled out from the time of

pretesting (e.g., late October) to late May, a period of time that includes approximately 120 instructional days.

- Unit-level coding forms--Three times during the year, field staff visited classrooms to observe, interview teachers, and examine curricular materials. Information derived from these sources was entered into a coding form (see Appendix B) divided into sections for language arts and mathematics, and further subdivided into subsections corresponding to the actual observed lessons or the two-week period within which these lessons took place.

These data sources yielded different kinds of measures for analytic purposes. Because analyses concentrated on the whole school year and took the classroom as primary unit, the following types of analytic measures were used:

(1) Percentage of the classroom's students with a given attribute (rosters).

(2) Of all instructional days, percentage on which a given activity, event, etc., took place (teacher logs).

(3) Across all observed lessons (or two-week observation periods), the percentage on which a certain instructional strategy, material, etc., was used (coding form--observed lessons).

(4) Across all observed lessons for two-week observation periods, the average ratings by observers of some aspect of instruction (coding form).

(5) Across all observed lessons (or two-week observation periods), an average count of something taking place in the classroom (coding form).

We include notes below by subject area regarding derived or constructed measures used in analyses of each subject area. All other measures were taken straightforwardly from the teachers' logs or coding forms.

Mathematics Measures

Most of the variables in the Chapter III tables are self-explanatory and correspond to the relevant item in the teachers' log or coding form. The following are exceptions:

- Richness of teacher's background in mathematics: Created by summing the possible responses to H1 (coding form). Range: 1 to 6 (6 = richest background).

- Teacher's satisfaction with teaching as a career and with support in current teaching position: Created by averaging H8b and H8d (coding form). Range: 1 to 4 (4 = very unsatisfied).

- Teacher's expectations for student success in mathematics: Created by treating the values of H6 (coding form) as a scale, although with 2 and 3 treated as the same value. Range: 1 to 4 (4 = most won't be able to succeed).

Reading Measures

The same three measures just described for mathematics were created for reading analyses using data from the same coding form items, only with the "language arts" column rather than the "mathematics" column. In addition, one set of reading analyses employed the "amount of extended text writing" variable noted below.

Writing Measures

Several writing measures require special explanation:

- Amount of extended text writing: Created by classifying classes as high, medium, or low on each of three variables: D11c and C19c (coding form); and a derived variable--percent of all writing tasks that were extended--based on D11. Cutpoints were set arbitrarily to divide each distribution into approximate thirds. The three ratings were then averaged with each other to form a composite rating (high, medium, low), which represented the amount of extended text writing.

- Degree of attention to writing process: Created from three writing variables (W2a, b, and c) on the daily teacher's log, by cutting the distributions of each into thirds, as described above, and then averaging the high-medium-low ratings for each to arrive at an overall high-medium-low rating.

Whole-Class/Part-of-Class Weighting

Both the teachers' log and the coding form (which includes a set of items identical to those in the log) contain item formats that permit activities, instructional approaches, or events to apply to the "whole class" (all or almost all of the students in the room) or to "part of the class" (e.g., one or several groups). Data from both columns were combined using a weighting scheme in which "part of class" codes were assumed to apply to half the class. In overall counts--for example, of minutes spent reading--a part-of-class value of 30 minutes was thus treated as analytically equivalent to 15 minutes spent with whole class. Weighting assumptions were altered with different types of measures (percentages, scale values, etc.).

Appendix B

INSTRUMENTS

Teacher Log (p. 217)

Coding Form (p. 241)

(ID LABEL)

Week Beginning Monday:

____/____/____

[ID 1/1-6]
[1/7-12]

Academic Instruction Study

TEACHER'S WEEKLY LOG

General Instructions

1. Before the week begins, please indicate at the top of this cover page, the week to which the weekly log refers.

2. Please fill out this log on a daily basis AFTER your teaching day is over.

3. For each day, please indicate the focus of instruction, activities in which students engaged, homework assigned, and instructional materials used for:

   - Reading
   - Writing (composing or refining text)
   - Other Aspects of Language Arts (including instruction in "language mechanics," literary forms or genre, oral communication, and ESL, if any)
   - Mathematics

   Instruction in reading, writing, etc., may have occurred at any time during your school day--not necessarily during a designated "reading" or "writing" period--but must have had mastery of reading, writing, etc., skills as a main goal.

4. Fill out the log by circling the number next to any skills, activities, etc., that were part of instruction aimed at:

   - The whole class (which includes whole group instruction, seatwork in which all students worked on the same or similar tasks)

   or:

   - Part of the class (i.e., small group or individually tailored instruction, in which particular groups or individuals worked on substantially different tasks)

5. Use the comment space at the bottom of each page to indicate anything unique or unusual about the day's lessons that would help us understand your log entries.

6. At the end of the week, fill out the weekly summary page and mail the log to SRI in the postage-paid envelope.

READING -- MONDAY

R1. **Was there any reading instruction today?**	YES	NO	
Integrated with writing or other language arts?	YES	NO	IF "NO" TO ALL,
As part of instruction in other subjects?	YES	NO	SKIP TO NEXT PAGE
Specifically for LEP students?	YES	NO	

	Whole Class	Part of Class
R2. **On what aspects of language mechanics did instruction focus?**		
Explicit phonics (sounds taught in isolation from words)	01	01
Implicit phonics -- As part of reading	02	02
Out of context	03	03
Whole word recognition -- As part of reading	04	04
Out of context	05	05
Word analysis -- As part of reading	06	06
Out of context	07	07
Fluency practice (e.g., oral reading for fluency)	08	08
Other (PLEASE SPECIFY)________________________________	09	09
R3. **On what did comprehension instruction focus?**		
Recalling information; locating information in text	1	1
Literal understanding of text; summarizing text	2	2
Deeper understanding of text ("reading between the lines")	3	3
Learning strategies for comprehending what is read	4	4
R4. **What did the students mainly do as part of reading instruction?**		
Listening to explanation or presentation by teacher	01	01
Oral reading (e.g., in small group)	02	02
Partner reading	03	03
Reading individually to teacher or aide (not in group)	04	04
Oral exercises or drill (e.g., to practice language mechanics)	05	05
Silent exercises or drill (e.g., in workbook)	06	06
Group/class discussion (e.g., to explore meaning of text)	07	07
Silent reading	08	08
Listening to tapes or stories being read aloud	09	09
Taking tests or other assessments of reading ability	10	10
Other reading activities (PLEASE SPECIFY) ________________________________	11	11
R5. **Was any reading homework assigned?**		
No homework assigned or pending from previous class	0	0
Completion of work begun in class today	1	1
New assignment to be done outside of class	2	2
Previous assignment(s) still pending	3	3
R6. **What kinds of materials were used in reading instruction today?**		
Published basal reader	1	1
Trade books	2	2
Language mechanics workbook	3	3
Text created by children	4	4
Other (PLEASE SPECIFY) ________________________________	5	5

R7. **Comments?**

[1/13-121]

WRITING (COMPOSING OR REFINING TEXT) -- MONDAY

W1. Was there any writing instruction today?	YES	NO	
Integrated with reading instruction?	YES	NO	IF "NO" TO ALL,
As part of instruction in other subjects?	YES	NO	SKIP TO NEXT PAGE
Instruction specifically for LEP students?	YES	NO	

	Whole Class	Part of Class
W2. On what aspects of writing did instruction focus?		
Prewriting	1	1
Drafting text	2	2
Revising text (altering the substantive meaning)	3	3
Editing text (altering the mechanics of the text)	4	4
W3. What type(s) of writing did students do?		
Essay (persuasive or analytic writing)	1	1
Other informative writing (report, summary, note taking)	2	2
Imaginative writing (poem, story, play)	3	3
Personal writing (journal, letter)	4	4
Other (PLEASE SPECIFY) ______________________	5	5
W4. What did the students mainly do as part of writing instruction?		
Listen to explanation or presentation by teacher	1	1
Generate ideas for writing (e.g., in small group)	2	2
Work on student's own text (with paper and pen or pencil)	3	3
Give feedback to other children about their writing	4	4
Have conference with teacher or aide about writing	5	5
Use computer to draft, revise, or edit text	6	6
Create visuals or other materials to accompany text	7	7
Other writing activities (PLEASE SPECIFY) ______________________	8	8
W5. What was done with students' writing today?		
Kept by students to complete at a later time	1	1
Kept (in completed form) for students' own use	2	2
Given to the teacher for review without grading or correcting	3	3
Given to teacher for grading or correcting	4	4
Read or displayed to other students in class	5	5
Sent or shown to others outside of class	6	6
Other use (PLEASE SPECIFY) ______________________	7	7
W6. Was any writing homework assigned?		
No homework assigned or pending from previous class	0	0
Completion of writing done in class today	1	1
New assignment to be done outside of class	2	2
Previous assignment(s) still pending	3	3

W7. Representative topics/assignments used in writing instruction today:

A. ____

B. ____

C. ____

W8. Comments?

[2/1-71]

OTHER LANGUAGE ARTS (LANGUAGE MECHANICS, LITERARY FORMS OR GENRE, ORAL COMMUNICATION, AND ESL) -- MONDAY

L1. **Was there any other language arts instruction today?**	YES	NO	IF "NO" TO BOTH,
Specifically for LEP students (e.g., ESL)?	YES	NO	SKIP TO NEXT PAGE

L2. **On what aspects of language mechanics did instruction focus?**	Whole Class	Part of Class
Handwriting	01	01
Spelling	02	02
Punctuation; capitalization	03	03
Vocabulary -- As part of writing or reading	04	04
-- Out of context	05	05
Sentence structure -- As part of writing or reading	06	06
-- Out of context	07	07
Parts of speech -- As part of writing or reading	08	08
-- Out of context	09	09
Other (PLEASE SPECIFY)________________________	10	10
L3. **Did instruction focus on literary forms, genre, analysis, etc.?**		
Yes, in conjunction with what students were reading or writing	1	1
Yes, out of context	2	2
L4. **On what did instruction in oral communication and expression (including ESL) focus?**		
Oral self-expression skills	1	1
Particular forms of public expression (e.g., drama, debate)	2	2
Pronunciation (second language learners)	3	3
Vocabulary development (second language learners)	4	4
Sentence pattern learning (second language learners)	5	5
Fluency of expression (second language learners)	6	6
Other oral communication/expression skills (PLEASE SPECIFY)________________________	7	7
L5. **What did the students mainly do as part of other language arts instruction?**		
Listening to explanation or presentation by teacher	1	1
Oral exercises or drill (e.g. to practice oral skills)	2	2
Dramatization or role play	3	3
Student oral presentation/expression to class or group	4	4
Listening to tapes, story-telling by teacher, etc.	5	5
Working on written exercises (e.g., in workbook)	6	6
Copying notes, letters, etc.; taking dictation	7	7
Taking tests (oral or written) of oral or written skills	8	8
Other oral or written language arts activities (PLEASE SPECIFY)________________________	9	9
L6. **Was any homework (in language mechanics, other language arts) assigned?**		
No homework assigned or pending from previous class	0	0
Completion of work begun in class today	1	1
New assignment to be done outside of class	2	2
Previous assignment(s) still pending	3	3
L7. **What instructional materials were used in other language arts instruction today?**		
Language arts textbook	1	1
Language mechanics workbook	2	2
Visual aids (e.g., for exercises in oral expression)	3	3
Other (PLEASE SPECIFY)________________________	4	4

L8. **Comments?**

[3/1-99]

MATHEMATICS -- MONDAY

M1. **Was there any designated "mathematics" instruction today?** YES NO IF "NO" TO BOTH,
Any math as part of instruction in other subject areas? YES NO SKIP TO NEXT PAGE

M2. **On which topic(s) did today's math instruction focus?**	Whole Class	Part of Class
Arithmetic (or algebra)	1	1
Geometry	2	2
Measurement	3	3
Statistics/probability	4	4
Graphs	5	5
Other (PLEASE SPECIFY)________________________	6	6
M3. **What did instruction on the topic(s) primarily emphasize?**		
Building skills in using procedures or symbols	1	1
Developing understanding of mathematical concepts or ideas	2	2
Routine applications of mathematical procedures	3	3
Applying mathematical ideas or procedures to novel problems	4	4

M4. **If main topic was arithmetic (or algebra), what operations and quantities were involved?** (PLEASE ENTER UP TO THREE NUMBERS FROM THE GRID BELOW IN THE SPACES UNDER "WHOLE CLASS" OR "PART OF CLASS," AS APPROPRIATE)

Quantities to be Operated Upon

Operation	Whole Nos.	Number or Algebra Sentences	Fractions Like	Fractions Unlike	Mixed Nos.	Deci-mals	Ratio, Percent
• Numbers/numeration	A1	A2	A3	A4	A5	A6	A7
• Add	B1	B2	B3	B4	B5	B6	B7
• Subtract	C1	C2	C3	C4	C5	C6	C7
• Multiply	D1	D2	D3	D4	D5	D6	D7
• Divide	E1	E2	E3	E4	E5	E6	E7
• Combination (+,-,x,/)	F1	F2	F3	F4	F5	F6	F7
• Estimate	G1	G2	G3	G4	G5	G6	G7
• Identify equivalents	H1	H2	H3	H4	H5	H6	H7
• Other	I1	I2	I3	I4	I5	I6	I7

☐☐	☐☐
☐☐	☐☐
☐☐	☐☐

M5. **What did the students primarily do as part of mathematics instruction?**		
Listening to explanation or presentation by teacher	1	1
Oral exercises or drill (e.g. to practice mental math)	2	2
Group/class discussion of assignments, problems, new topics	3	3
Individual practice (e.g., seatwork)	4	4
Collaborative work on mathematical projects or problems	5	5
Computer-based activities	6	6
Taking tests or other assessments of mathematics achievement	7	7
Other activities (PLEASE SPECIFY)________________	8	8
M6. **Was any mathematics homework assigned?**		
No homework assigned or pending from previous class	0	0
Completion of today's classwork	1	1
New assignment to be done outside of class	2	2
Previous assignment(s) still pending	3	3
M7. **What instructional materials were used in mathematics instruction today?**		
Published textbook	1	1
Published workbook	2	2
Manipulatives (PLEASE SPECIFY)__________________	3	3
Calculators	4	4
Other (PLEASE SPECIFY)________________________	5	5

M8. **Comments?**

[4/1-73]

READING -- TUESDAY

R1. Was there any reading instruction today?	YES	NO	
Integrated with writing or other language arts?	YES	NO	IF "NO" TO ALL,
As part of instruction in other subjects?	YES	NO	SKIP TO NEXT PAGE
Specifically for LEP students?	YES	NO	

	Whole Class	Part of Class
R2. On what aspects of language mechanics did instruction focus?		
Explicit phonics (sounds taught in isolation from words)	01	01
Implicit phonics -- As part of reading	02	02
Out of context	03	03
Whole word recognition -- As part of reading	04	04
Out of context	05	05
Word analysis -- As part of reading	06	06
Out of context	07	07
Fluency practice (e.g., oral reading for fluency)	08	08
Other (PLEASE SPECIFY)________________________	09	09
R3. On **what did comprehension instruction focus?**		
Recalling information; locating information in text	1	1
Literal understanding of text; summarizing text	2	2
Deeper understanding of text ("reading between the lines")	3	3
Learning strategies for comprehending what is read	4	4
R4. **What did the students mainly do as part of reading instruction?**		
Listening to explanation or presentation by teacher	01	01
Oral reading (e.g., in small group)	02	02
Partner reading	03	03
Reading individually to teacher or aide (not in group)	04	04
Oral exercises or drill (e.g., to practice language mechanics)	05	05
Silent exercises or drill (e.g., in workbook)	06	06
Group/class discussion (e.g., to explore meaning of text)	07	07
Silent reading	08	08
Listening to tapes or stories being read aloud	09	09
Taking tests or other assessments of reading ability	10	10
Other reading activities (PLEASE SPECIFY) ________________________________	11	11
R5. **Was any reading homework assigned?**		
No homework assigned or pending from previous class	0	0
Completion of work begun in class today	1	1
New assignment to be done outside of class	2	2
Previous assignment(s) still pending	3	3
R6. **What kinds of materials were used in reading instruction today?**		
Published basal reader	1	1
Trade books	2	2
Language mechanics workbook	3	3
Text created by children	4	4
Other (PLEASE SPECIFY) ________________________	5	5

R7. **Comments?** [5/1-115]

WRITING (COMPOSING OR REFINING TEXT) -- TUESDAY

W1. Was there any writing instruction today?	YES	NO	
Integrated with reading instruction?	YES	NO	IF "NO" TO ALL,
As part of instruction in other subjects?	YES	NO	SKIP TO NEXT PAGE
Instruction specifically for LEP students?	YES	NO	

	Whole Class	Part of Class
W2. On what aspects of writing did instruction focus?		
Prewriting	1	1
Drafting text	2	2
Revising text (altering the substantive meaning)	3	3
Editing text (altering the mechanics of the text)	4	4
W3. What type(s) of writing did students do?		
Essay (persuasive or analytic writing)	1	1
Other informative writing (report, summary, note taking)	2	2
Imaginative writing (poem, story, play)	3	3
Personal writing (journal, letter)	4	4
Other (PLEASE SPECIFY) ______________________________	5	5
W4. What did the students mainly do as part of writing instruction?		
Listen to explanation or presentation by teacher	1	1
Generate ideas for writing (e.g., in small group)	2	2
Work on student's own text (with paper and pen or pencil)	3	3
Give feedback to other children about their writing	4	4
Have conference with teacher or aide about writing	5	5
Use computer to draft, revise, or edit text	6	6
Create visuals or other materials to accompany text	7	7
Other writing activities (PLEASE SPECIFY) ______________________________	8	8
W5. What was done with students' writing today?		
Kept by students to complete at a later time	1	1
Kept (in completed form) for students' own use	2	2
Given to the teacher for review without grading or correcting	3	3
Given to teacher for grading or correcting	4	4
Read or displayed to other students in class	5	5
Sent or shown to others outside of class	6	6
Other use (PLEASE SPECIFY) ______________________________	7	7
W6. Was any writing homework assigned?		
No homework assigned or pending from previous class	0	0
Completion of writing done in class today	1	1
New assignment to be done outside of class	2	2
Previous assignment(s) still pending	3	3

W7. Representative topics/assignments used in writing instruction today:

A. ____

B. ____

C. ____

W8. Comments?

[6/1-71]

OTHER LANGUAGE ARTS (LANGUAGE MECHANICS, LITERARY FORMS OR GENRE, ORAL COMMUNICATION, AND ESL) -- TUESDAY

L1. Was there any other language arts instruction today?	YES	NO	IF "NO" TO BOTH,
Specifically for LEP students (e.g., ESL)?	YES	NO	SKIP TO NEXT PAGE

L2. On what aspects of language mechanics did instruction focus?	Whole Class	Part of Class
Handwriting	01	01
Spelling	02	02
Punctuation; capitalization	03	03
Vocabulary -- As part of writing or reading	04	04
-- Out of context	05	05
Sentence structure -- As part of writing or reading	06	06
-- Out of context	07	07
Parts of speech -- As part of writing or reading	08	08
-- Out of context	09	09
Other (PLEASE SPECIFY)______________________________	10	10

L3. Did instruction focus on literary forms, genre, analysis, etc.?		
Yes, in conjunction with what students were reading or writing	1	1
Yes, out of context	2	2

L4. On what did instruction in oral communication and expression (including ESL) focus?		
Oral self-expression skills	1	1
Particular forms of public expression (e.g., drama, debate)	2	2
Pronunciation (second language learners)	3	3
Vocabulary development (second language learners)	4	4
Sentence pattern learning (second language learners)	5	5
Fluency of expression (second language learners)	6	6
Other oral communication/expression skills (PLEASE SPECIFY) ______________________________	7	7

L5. What did the students mainly do as part of other language arts instruction?		
Listening to explanation or presentation by teacher	1	1
Oral exercises or drill (e.g. to practice oral skills)	2	2
Dramatization or role play	3	3
Student oral presentation/expression to class or group	4	4
Listening to tapes, story-telling by teacher, etc.	5	5
Working on written exercises (e.g., in workbook)	6	6
Copying notes, letters, etc.; taking dictation	7	7
Taking tests (oral or written) of oral or written skills	8	8
Other oral or written language arts activities (PLEASE SPECIFY)______________________________	9	9

L6. Was any homework (in language mechanics, other language arts) assigned?		
No homework assigned or pending from previous class	0	0
Completion of work begun in class today	1	1
New assignment to be done outside of class	2	2
Previous assignment(s) still pending	3	3

L7. What instructional materials were used in other language arts instruction today?		
Language arts textbook	1	1
Language mechanics workbook	2	2
Visual aids (e.g., for exercises in oral expression)	3	3
Other (PLEASE SPECIFY)______________________________	4	4

L8. Comments?

[7/1-99]

MATHEMATICS -- TUESDAY

M1. Was there any designated "mathematics" instruction today?	YES	NO	IF "NO" TO BOTH,
Any math as part of instruction in other subject areas?	YES	NO	SKIP TO NEXT PAGE

M2. On which topic(s) did today's math instruction focus?	Whole Class	Part of Class
Arithmetic (or algebra)	1	1
Geometry	2	2
Measurement	3	3
Statistics/probability	4	4
Graphs	5	5
Other (PLEASE SPECIFY)____	6	6

M3. What did instruction on the topic(s) primarily emphasize?		
Building skills in using procedures or symbols	1	1
Developing understanding of mathematical concepts or ideas	2	2
Routine applications of mathematical procedures	3	3
Applying mathematical ideas or procedures to novel problems	4	4

M4. If main topic was arithmetic (or algebra), what operations and quantities were involved? (PLEASE ENTER UP TO THREE NUMBERS FROM THE GRID BELOW IN THE SPACES UNDER "WHOLE CLASS" OR "PART OF CLASS," AS APPROPRIATE)

	Quantities to be Operated Upon						
Operation	Whole Nos.	Number or Algebra Sentences	Fractions Like	Fractions Unlike	Mixed Nos.	Decimals	Ratio, Percent
• Numbers/numeration	A1	A2	A3	A4	A5	A6	A7
• Add	B1	B2	B3	B4	B5	B6	B7
• Subtract	C1	C2	C3	C4	C5	C6	C7
• Multiply	D1	D2	D3	D4	D5	D6	D7
• Divide	E1	E2	E3	E4	E5	E6	E7
• Combination (+,-,x,/)	F1	F2	F3	F4	F5	F6	F7
• Estimate	G1	G2	G3	G4	G5	G6	G7
• Identify equivalents	H1	H2	H3	H4	H5	H6	H7
• Other	I1	I2	I3	I4	I5	I6	I7

☐☐	☐☐
☐☐	☐☐
☐☐	☐☐

M5. What did the students primarily do as part of mathematics instruction?		
Listening to explanation or presentation by teacher	1	1
Oral exercises or drill (e.g. to practice mental math)	2	2
Group/class discussion of assignments, problems, new topics	3	3
Individual practice (e.g., seatwork)	4	4
Collaborative work on mathematical projects or problems	5	5
Computer-based activities	6	6
Taking tests or other assessments of mathematics achievement	7	7
Other activities (PLEASE SPECIFY)____________________________	8	8

M6. Was any mathematics homework assigned?		
No homework assigned or pending from previous class	0	0
Completion of today's classwork	1	1
New assignment to be done outside of class	2	2
Previous assignment(s) still pending	3	3

M7. What instructional materials were used in mathematics instruction today?		
Published textbook	1	1
Published workbook	2	2
Manipulatives (PLEASE SPECIFY)_______________________________	3	3
Calculators	4	4
Other (PLEASE SPECIFY)_______________________________________	5	5

M8. Comments?

[8/1-73]

READING -- WEDNESDAY

R1. Was there any reading instruction today?	YES	NO	
Integrated with writing or other language arts?	YES	NO	IF "NO" TO ALL,
As part of instruction in other subjects?	YES	NO	SKIP TO NEXT PAGE
Specifically for LEP students?	YES	NO	

	Whole Class	Part of Class
R2. On what aspects of language mechanics did instruction focus?		
Explicit phonics (sounds taught in isolation from words)	01	01
Implicit phonics -- As part of reading	02	02
Out of context	03	03
Whole word recognition -- As part of reading	04	04
Out of context	05	05
Word analysis -- As part of reading	06	06
Out of context	07	07
Fluency practice (e.g., oral reading for fluency)	08	08
Other (PLEASE SPECIFY)________________________	09	09
R3. On what did comprehension instruction focus?		
Recalling information; locating information in text	1	1
Literal understanding of text; summarizing text	2	2
Deeper understanding of text ("reading between the lines")	3	3
Learning strategies for comprehending what is read	4	4
R4. What did the students mainly do as part of reading instruction?		
Listening to explanation or presentation by teacher	01	01
Oral reading (e.g., in small group)	02	02
Partner reading	03	03
Reading individually to teacher or aide (not in group)	04	04
Oral exercises or drill (e.g., to practice language mechanics)	05	05
Silent exercises or drill (e.g., in workbook)	06	06
Group/class discussion (e.g., to explore meaning of text)	07	07
Silent reading	08	08
Listening to tapes or stories being read aloud	09	09
Taking tests or other assessments of reading ability	10	10
Other reading activities (PLEASE SPECIFY) ________________________	11	11
R5. Was any reading homework assigned?		
No homework assigned or pending from previous class	0	0
Completion of work begun in class today	1	1
New assignment to be done outside of class	2	2
Previous assignment(s) still pending	3	3
R6. What kinds of materials were used in reading instruction today?		
Published basal reader	1	1
Trade books	2	2
Language mechanics workbook	3	3
Text created by children	4	4
Other (PLEASE SPECIFY) ________________________	5	5

R7. Comments?

[9/1-115]

WRITING (COMPOSING OR REFINING TEXT) -- WEDNESDAY

W1. Was there any writing instruction today?	**YES**	**NO**	
Integrated with reading instruction?	YES	NO	IF "NO" TO ALL,
As part of instruction in other subjects?	YES	NO	SKIP TO NEXT PAGE
Instruction specifically for LEP students?	YES	NO	

	Whole Class	Part of Class
W2. On what aspects of writing did instruction focus?		
Prewriting	1	1
Drafting text	2	2
Revising text (altering the substantive meaning)	3	3
Editing text (altering the mechanics of the text)	4	4
W3. What type(s) of writing did students do?		
Essay (persuasive or analytic writing)	1	1
Other informative writing (report, summary, note taking)	2	2
Imaginative writing (poem, story, play)	3	3
Personal writing (journal, letter)	4	4
Other (PLEASE SPECIFY) ________________________	5	5
W4. What did the students mainly do as part of writing instruction?		
Listen to explanation or presentation by teacher	1	1
Generate ideas for writing (e.g., in small group)	2	2
Work on student's own text (with paper and pen or pencil)	3	3
Give feedback to other children about their writing	4	4
Have conference with teacher or aide about writing	5	5
Use computer to draft, revise, or edit text	6	6
Create visuals or other materials to accompany text	7	7
Other writing activities (PLEASE SPECIFY) ________________________	8	8
W5. What was done with students' writing today?		
Kept by students to complete at a later time	1	1
Kept (in completed form) for students' own use	2	2
Given to the teacher for review without grading or correcting	3	3
Given to teacher for grading or correcting	4	4
Read or displayed to other students in class	5	5
Sent or shown to others outside of class	6	6
Other use (PLEASE SPECIFY) ________________________	7	7
W6. Was any writing homework assigned?		
No homework assigned or pending from previous class	0	0
Completion of writing done in class today	1	1
New assignment to be done outside of class	2	2
Previous assignment(s) still pending	3	3

W7. Representative topics/assignments used in writing instruction today:

A. ____

B. ____

C. ____

W8. Comments?

[10/1-71]

OTHER LANGUAGE ARTS (LANGUAGE MECHANICS, LITERARY FORMS OR GENRE, ORAL COMMUNICATION, AND ESL) -- WEDNESDAY

L1. **Was there any other language arts instruction today?** **YES** NO IF "NO" TO BOTH,
Specifically for LEP students (e.g., ESL)? YES NO SKIP TO NEXT PAGE

L2. **On what aspects of language mechanics did instruction focus?**	Whole Class	Part of Class
Handwriting	01	01
Spelling	02	02
Punctuation; capitalization	03	03
Vocabulary -- As part of writing or reading	04	04
-- Out of context	05	05
Sentence structure -- As part of writing or reading	06	06
-- Out of context	07	07
Parts of speech -- As part of writing or reading	08	08
-- Out of context	09	09
Other (PLEASE SPECIFY)________	10	10
L3. **Did instruction focus on literary forms, genre, analysis, etc.?**		
Yes, in conjunction with what students were reading or writing	1	1
Yes, out of context	2	2
L4. **On what did instruction in oral communication and expression (including ESL) focus?**		
Oral self-expression skills	1	1
Particular forms of public expression (e.g., drama, debate)	2	2
Pronunciation (second language learners)	3	3
Vocabulary development (second language learners)	4	4
Sentence pattern learning (second language learners)	5	5
Fluency of expression (second language learners)	6	6
Other oral communication/expression skills (PLEASE SPECIFY)________	7	7
L5. What did the students mainly do as part of other language arts instruction?		
Listening to explanation or presentation by teacher	1	1
Oral exercises or drill (e.g. to practice oral skills)	2	2
Dramatization or role play	3	3
Student oral presentation/expression to class or group	4	4
Listening to tapes, story-telling by teacher, etc.	5	5
Working on written exercises (e.g., in workbook)	6	6
Copying notes, letters, etc.; taking dictation	7	7
Taking tests (oral or written) of oral or written skills	8	8
Other oral or written language arts activities (PLEASE SPECIFY)________	9	9
L6. **Was any homework (in language mechanics, other language arts) assigned?**		
No homework assigned or pending from previous class	0	0
Completion of work begun in class today	1	1
New assignment to be done outside of class	2	2
Previous assignment(s) still pending	3	3
L7. **What instructional materials were used in other language arts instruction today?**		
Language arts textbook	1	1
Language mechanics workbook	2	2
Visual aids (e.g., for exercises in oral expression)	3	3
Other (PLEASE SPECIFY)________	4	4

L8. **Comments?**

[11/1-99]

MATHEMATICS -- WEDNESDAY

M1. Was there any designated "mathematics" instruction today?	YES	NO	IF "NO" TO BOTH,
Any math as part of instruction in other subject areas?	YES	NO	SKIP TO NEXT PAGE

M2. On which topic(s) did today's math instruction focus?	Whole Class	Part of Class
Arithmetic (or algebra)	1	1
Geometry	2	2
Measurement	3	3
Statistics/probability	4	4
Graphs	5	5
Other (PLEASE SPECIFY)________________	6	6

M3. What did instruction on the topic(s) primarily emphasize?		
Building skills in using procedures or symbols	1	1
Developing understanding of mathematical concepts or ideas	2	2
Routine applications of mathematical procedures	3	3
Applying mathematical ideas or procedures to novel problems	4	4

M4. If main topic was arithmetic (or algebra), what operations and quantities were involved? (PLEASE ENTER UP TO THREE NUMBERS FROM THE GRID BELOW IN THE SPACES UNDER "WHOLE CLASS" OR "PART OF CLASS," AS APPROPRIATE)

	Quantities to be Operated Upon						
Operation	Whole Nos.	Number or Algebra Sentences	Fractions Like	Fractions Unlike	Mixed Nos.	Decimals	Ratio, Percent
• Numbers/numeration	A1	A2	A3	A4	A5	A6	A7
• Add	B1	B2	B3	B4	B5	B6	B7
• Subtract	C1	C2	C3	C4	C5	C6	C7
• Multiply	D1	D2	D3	D4	D5	D6	D7
• Divide	E1	E2	E3	E4	E5	E6	E7
• Combination (+,-,x,/)	F1	F2	F3	F4	F5	F6	F7
• Estimate	G1	G2	G3	G4	G5	G6	G7
• Identify equivalents	H1	H2	H3	H4	H5	H6	H7
• Other	I1	I2	I3	I4	I5	I6	I7

☐☐	☐☐
☐☐	☐☐
☐☐	☐☐

M5. What did the students primarily do as part of mathematics instruction?		
Listening to explanation or presentation by teacher	1	1
Oral exercises or drill (e.g. to practice mental math)	2	2
Group/class discussion of assignments, problems, new topics	3	3
Individual practice (e.g., seatwork)	4	4
Collaborative work on mathematical projects or problems	5	5
Computer-based activities	6	6
Taking tests or other assessments of mathematics achievement	7	7
Other activities (PLEASE SPECIFY)________________	8	8

M6. Was any mathematics homework assigned?		
No homework assigned or pending from previous class	0	0
Completion of today's classwork	1	1
New assignment to be done outside of class	2	2
Previous assignment(s) still pending	3	3

M7. What instructional materials were used in mathematics instruction today?		
Published textbook	1	1
Published workbook	2	2
Manipulatives (PLEASE SPECIFY)________________	3	3
Calculators	4	4
Other (PLEASE SPECIFY)________________	5	5

M8. Comments?

[12/1-73]

READING -- THURSDAY

R1. Was there any reading instruction today?	YES	NO	
Integrated with writing or other language arts?	YES	NO	IF "NO" TO ALL,
As part of instruction in other subjects?	YES	NO	SKIP TO NEXT PAGE
Specifically for LEP students?	YES	NO	

	Whole Class	Part of Class
R2. On what aspects of language mechanics did instruction focus?		
Explicit phonics (sounds taught in isolation from words)	01	01
Implicit phonics -- As part of reading	02	02
Out of context	03	03
Whole word recognition -- As part of reading	04	04
Out of context	05	05
Word analysis -- As part of reading	06	06
Out of context	07	07
Fluency practice (e.g., oral reading for fluency)	08	08
Other (PLEASE SPECIFY)____________________	09	09
R3. On what did comprehension instruction focus?		
Recalling information; locating information in text	1	1
Literal understanding of text; summarizing text	2	2
Deeper understanding of text ("reading between the lines")	3	3
Learning strategies for comprehending what is read	4	4
R4. What did the students mainly do as part of reading instruction?		
Listening to explanation or presentation by teacher	01	01
Oral reading (e.g., in small group)	02	02
Partner reading	03	03
Reading individually to teacher or aide (not in group)	04	04
Oral exercises or drill (e.g., to practice language mechanics)	05	05
Silent exercises or drill (e.g., in workbook)	06	06
Group/class discussion (e.g., to explore meaning of text)	07	07
Silent reading	08	08
Listening to tapes or stories being read aloud	09	09
Taking tests or other assessments of reading ability	10	10
Other reading activities (PLEASE SPECIFY) ____________________	11	11
R5. Was any reading homework assigned?		
No homework assigned or pending from previous class	0	0
Completion of work begun in class today	1	1
New assignment to be done outside of class	2	2
Previous assignment(s) still pending	3	3
R6. What kinds of materials were used in reading instruction today?		
Published basal reader	1	1
Trade books	2	2
Language mechanics workbook	3	3
Text created by children	4	4
Other (PLEASE SPECIFY) ____________________	5	5

R7. Comments?

[13/1-115]

WRITING (COMPOSING OR REFINING TEXT) -- THURSDAY

W1. Was there any writing instruction today?	YES	NO	
Integrated with reading instruction?	YES	NO	IF "NO" TO ALL,
As part of instruction in other subjects?	YES	NO	SKIP TO NEXT PAGE
Instruction specifically for LEP students?	YES	NO	

	Whole Class	Part of Class
W2. On what aspects of writing did instruction focus?		
Prewriting	1	1
Drafting text	2	2
Revising text (altering the substantive meaning)	3	3
Editing text (altering the mechanics of the text)	4	4
W3. What type(s) of writing did students do?		
Essay (persuasive or analytic writing)	1	1
Other informative writing (report, summary, note taking)	2	2
Imaginative writing (poem, story, play)	3	3
Personal writing (journal, letter)	4	4
Other (PLEASE SPECIFY) ______________________	5	5
W4. What did the students mainly do as part of writing instruction?		
Listen to explanation or presentation by teacher	1	1
Generate ideas for writing (e.g., in small group)	2	2
Work on student's own text (with paper and pen or pencil)	3	3
Give feedback to other children about their writing	4	4
Have conference with teacher or aide about writing	5	5
Use computer to draft, revise, or edit text	6	6
Create visuals or other materials to accompany text	7	7
Other writing activities (PLEASE SPECIFY) ______________________	8	8
W5. What was done with students' writing today?		
Kept by students to complete at a later time	1	1
Kept (in completed form) for students' own use	2	2
Given to the teacher for review without grading or correcting	3	3
Given to teacher for grading or correcting	4	4
Read or displayed to other students in class	5	5
Sent or shown to others outside of class	6	6
Other use (PLEASE SPECIFY) ______________________	7	7
W6. Was any writing homework assigned?		
No homework assigned or pending from previous class	0	0
Completion of writing done in class today	1	1
New assignment to be done outside of class	2	2
Previous assignment(s) still pending	3	3

W7. Representative topics/assignments used in writing instruction today:

A. ____

B. ____

C. ____

W8. Comments?

[14/1-71]

OTHER LANGUAGE ARTS (LANGUAGE MECHANICS, LITERARY FORMS OR GENRE, ORAL COMMUNICATION, AND ESL) -- THURSDAY

L1. **Was there any other language arts instruction today?**	YES	NO	IF "NO" TO BOTH,
Specifically for LEP students (e.g., ESL)?	YES	NO	SKIP TO NEXT PAGE

L2. **On what aspects of language mechanics did instruction focus?**

	Whole Class	Part of Class
Handwriting	01	01
Spelling	02	02
Punctuation; capitalization	03	03
Vocabulary -- As part of writing or reading	04	04
-- Out of context	05	05
Sentence structure -- As part of writing or reading	06	06
-- Out of context	07	07
Parts of speech -- As part of writing or reading	08	08
-- Out of context	09	09
Other (PLEASE SPECIFY)________________	10	10

L3. **Did instruction focus on literary forms, genre, analysis, etc.?**

Yes, in conjunction with what students were reading or writing	1	1
Yes, out of context	2	2

L4. **On what did instruction in oral communication and expression (including ESL) focus?**

Oral self-expression skills	1	1
Particular forms of public expression (e.g., drama, debate)	2	2
Pronunciation (second language learners)	3	3
Vocabulary development (second language learners)	4	4
Sentence pattern learning (second language learners)	5	5
Fluency of expression (second language learners)	6	6
Other oral communication/expression skills (PLEASE SPECIFY)________________	7	7

L5. **What did the students mainly do as part of other language arts instruction?**

Listening to explanation or presentation by teacher	1	1
Oral exercises or drill (e.g. to practice oral skills)	2	2
Dramatization or role play	3	3
Student oral presentation/expression to class or group	4	4
Listening to tapes, story-telling by teacher, etc.	5	5
Working on written exercises (e.g., in workbook)	6	6
Copying notes, letters, etc.; taking dictation	7	7
Taking tests (oral or written) of oral or written skills	8	8
Other oral or written language arts activities (PLEASE SPECIFY)________________	9	9

L6. **Was any homework (in language mechanics, other language arts) assigned?**

No homework assigned or pending from previous class	0	0
Completion of work begun in class today	1	1
New assignment to be done outside of class	2	2
Previous assignment(s) still pending	3	3

L7. **What instructional materials were used in other language arts instruction today?**

Language arts textbook	1	1
Language mechanics workbook	2	2
Visual aids (e.g., for exercises in oral expression)	3	3
Other (PLEASE SPECIFY)________________	4	4

L8. **Comments?**

[15/1-99]

MATHEMATICS -- THURSDAY

M1. Was there any designated "mathematics" instruction today?	YES	NO	IF "NO" TO BOTH,
Any math as part of instruction in other subject areas?	YES	NO	SKIP TO NEXT PAGE

M2. On which topic(s) did today's math instruction focus?	Whole Class	Part of Class
Arithmetic (or algebra)	1	1
Geometry	2	2
Measurement	3	3
Statistics/probability	4	4
Graphs	5	5
Other (PLEASE SPECIFY)________________________	6	6

M3. What did instruction on the topic(s) primarily emphasize?		
Building skills in using procedures or symbols	1	1
Developing understanding of mathematical concepts or ideas	2	2
Routine applications of mathematical procedures	3	3
Applying mathematical ideas or procedures to novel problems	4	4

M4. If main topic was arithmetic (or algebra), what operations and quantities were involved? (PLEASE ENTER UP TO THREE NUMBERS FROM THE GRID BELOW IN THE SPACES UNDER "WHOLE CLASS" OR "PART OF CLASS," AS APPROPRIATE)

	Quantities to be Operated Upon						
Operation	Whole Nos.	Number or Algebra Sentences	Fractions Like	Fractions Unlike	Mixed Nos.	Deci- mals	Ratio, Percent
• Numbers/numeration	A1	A2	A3	A4	A5	A6	A7
• Add	B1	B2	B3	B4	B5	B6	B7
• Subtract	C1	C2	C3	C4	C5	C6	C7
• Multiply	D1	D2	D3	D4	D5	D6	D7
• Divide	E1	E2	E3	E4	E5	E6	E7
• Combination (+,-,x,/)	F1	F2	F3	F4	F5	F6	F7
• Estimate	G1	G2	G3	G4	G5	G6	G7
• Identify equivalents	H1	H2	H3	H4	H5	H6	H7
• Other	I1	I2	I3	I4	I5	I6	I7

☐☐ ☐☐

☐☐ ☐☐

☐☐ ☐☐

M5. What did the students primarily do as part of mathematics instruction?		
Listening to explanation or presentation by teacher	1	1
Oral exercises or drill (e.g. to practice mental math)	2	2
Group/class discussion of assignments, problems, new topics	3	3
Individual practice (e.g., seatwork)	4	4
Collaborative work on mathematical projects or problems	5	5
Computer-based activities	6	6
Taking tests or other assessments of mathematics achievement	7	7
Other activities (PLEASE SPECIFY)________________________	8	8

M6. Was any mathematics homework assigned?		
No homework assigned or pending from previous class	0	0
Completion of today's classwork	1	1
New assignment to be done outside of class	2	2
Previous assignment(s) still pending	3	3

M7. What instructional materials were used in mathematics instruction today?		
Published textbook	1	1
Published workbook	2	2
Manipulatives (PLEASE SPECIFY)________________________	3	3
Calculators	4	4
Other (PLEASE SPECIFY)________________________	5	5

M8. Comments?

[16/1-73]

READING -- FRIDAY

R1. Was there any reading instruction today?	YES	NO	
Integrated with writing or other language arts?	YES	NO	IF "NO" TO ALL,
As part of instruction in other subjects?	YES	NO	SKIP TO NEXT PAGE
Specifically for LEP students?	YES	NO	

	Whole Class	Part of Class
R2. **On what aspects of language mechanics did instruction focus?**		
Explicit phonics (sounds taught in isolation from words)	01	01
Implicit phonics -- As part of reading	02	02
Out of context	03	03
Whole word recognition -- As part of reading	04	04
Out of context	05	05
Word analysis -- As part of reading	06	06
Out of context	07	07
Fluency practice (e.g., oral reading for fluency)	08	08
Other (PLEASE SPECIFY)________________	09	09
R3. **On what did comprehension instruction focus?**		
Recalling information; locating information in text	1	1
Literal understanding of text; summarizing text	2	2
Deeper understanding of text ("reading between the lines")	3	3
Learning strategies for comprehending what is read	4	4
R4. **What did the students mainly do as part of reading instruction?**		
Listening to explanation or presentation by teacher	01	01
Oral reading (e.g., in small group)	02	02
Partner reading	03	03
Reading individually to teacher or aide (not in group)	04	04
Oral exercises or drill (e.g., to practice language mechanics)	05	05
Silent exercises or drill (e.g., in workbook)	06	06
Group/class discussion (e.g., to explore meaning of text)	07	07
Silent reading	08	08
Listening to tapes or stories being read aloud	09	09
Taking tests or other assessments of reading ability	10	10
Other reading activities (PLEASE SPECIFY) ________________	11	11
R5. **Was any reading homework assigned?**		
No homework assigned or pending from previous class	0	0
Completion of work begun in class today	1	1
New assignment to be done outside of class	2	2
Previous assignment(s) still pending	3	3
R6. **What kinds of materials were used in reading instruction today?**		
Published basal reader	1	1
Trade books	2	2
Language mechanics workbook	3	3
Text created by children	4	4
Other (PLEASE SPECIFY) ________________	5	5

R7. **Comments?** [17/1-115]

WRITING (COMPOSING OR REFINING TEXT) -- FRIDAY

W1. Was there any writing instruction today?	YES	NO	
Integrated with reading instruction?	YES	NO	IF "NO" TO ALL,
As part of instruction in other subjects?	YES	NO	SKIP TO NEXT PAGE
Instruction specifically for LEP students?	YES	NO	

	Whole Class	Part of Class
W2. On what aspects of writing did instruction focus?		
Prewriting	1	1
Drafting text	2	2
Revising text (altering the substantive meaning)	3	3
Editing text (altering the mechanics of the text)	4	4
W3. What type(s) of writing did students do?		
Essay (persuasive or analytic writing)	1	1
Other informative writing (report, summary, note taking)	2	2
Imaginative writing (poem, story, play)	3	3
Personal writing (journal, letter)	4	4
Other (PLEASE SPECIFY) ______________________________	5	5
W4. What did the students mainly do as part of writing instruction?		
Listen to explanation or presentation by teacher	1	1
Generate ideas for writing (e.g., in small group)	2	2
Work on student's own text (with paper and pen or pencil)	3	3
Give feedback to other children about their writing	4	4
Have conference with teacher or aide about writing	5	5
Use computer to draft, revise, or edit text	6	6
Create visuals or other materials to accompany text	7	7
Other writing activities (PLEASE SPECIFY) ______________________________	8	8
W5. What was done with students' writing today?		
Kept by students to complete at a later time	1	1
Kept (in completed form) for students' own use	2	2
Given to the teacher for review without grading or correcting	3	3
Given to teacher for grading or correcting	4	4
Read or displayed to other students in class	5	5
Sent or shown to others outside of class	6	6
Other use (PLEASE SPECIFY) ______________________________	7	7
W6. Was any writing homework assigned?		
No homework assigned or pending from previous class	0	0
Completion of writing done in class today	1	1
New assignment to be done outside of class	2	2
Previous assignment(s) still pending	3	3

W7. Representative topics/assignments used in writing instruction today:

A.____

B.____

C.____

W8. Comments?

[18/1-71]

OTHER LANGUAGE ARTS (LANGUAGE MECHANICS, LITERARY FORMS OR GENRE, ORAL COMMUNICATION, AND ESL) -- FRIDAY

L1. **Was there any other language arts instruction today?**	YES	NO	IF "NO" TO BOTH,
Specifically for LEP students (e.g., ESL)?	YES	NO	SKIP TO NEXT PAGE

L2. **On what aspects of language mechanics did instruction focus?**	Whole Class	Part of Class
Handwriting	01	01
Spelling	02	02
Punctuation; capitalization	03	03
Vocabulary -- As part of writing or reading	04	04
-- Out of context	05	05
Sentence structure -- As part of writing or reading	06	06
-- Out of context	07	07
Parts of speech -- As part of writing or reading	08	08
-- Out of context	09	09
Other (PLEASE SPECIFY)____________________	10	10
L3. **Did instruction focus on literary forms, genre, analysis, etc.?**		
Yes, in conjunction with what students were reading or writing	1	1
Yes, out of context	2	2
L4. **On what did instruction in oral communication and expression (including ESL) focus?**		
Oral self-expression skills	1	1
Particular forms of public expression (e.g., drama, debate)	2	2
Pronunciation (second language learners)	3	3
Vocabulary development (second language learners)	4	4
Sentence pattern learning (second language learners)	5	5
Fluency of expression (second language learners)	6	6
Other oral communication/expression skills (PLEASE SPECIFY) ____________________	7	7
L5. **What did the students mainly do as part of other language arts instruction?**		
Listening to explanation or presentation by teacher	1	1
Oral exercises or drill (e.g. to practice oral skills)	2	2
Dramatization or role play	3	3
Student oral presentation/expression to class or group	4	4
Listening to tapes, story-telling by teacher, etc.	5	5
Working on written exercises (e.g., in workbook)	6	6
Copying notes, letters, etc.; taking dictation	7	7
Taking tests (oral or written) of oral or written skills	8	8
Other oral or written language arts activities (PLEASE SPECIFY)____________________	9	9
L6. **Was any homework (in language mechanics, other language arts) assigned?**		
No homework assigned or pending from previous class	0	0
Completion of work begun in class today	1	1
New assignment to be done outside of class	2	2
Previous assignment(s) still pending	3	3
L7. **What instructional materials were used in other language arts instruction today?**		
Language arts textbook	1	1
Language mechanics workbook	2	2
Visual aids (e.g., for exercises in oral expression)	3	3
Other (PLEASE SPECIFY)____________________	4	4

L8. **Comments?**

[19/1-99]

MATHEMATICS -- FRIDAY

M1. Was there any designated "mathematics" instruction today? YES NO IF "NO" TO BOTH,
Any math as part of instruction in other subject areas? YES NO SKIP TO NEXT PAGE

M2. On which topic(s) did today's math instruction focus?	Whole Class	Part of Class
Arithmetic (or algebra)	1	1
Geometry	2	2
Measurement	3	3
Statistics/probability	4	4
Graphs	5	5
Other (PLEASE SPECIFY)________________________	6	6

M3. What did instruction on the topic(s) primarily emphasize?		
Building skills in using procedures or symbols	1	1
Developing understanding of mathematical concepts or ideas	2	2
Routine applications of mathematical procedures	3	3
Applying mathematical ideas or procedures to novel problems	4	4

M4. If main topic was arithmetic (or algebra), what operations and quantities were involved? (PLEASE ENTER UP TO THREE NUMBERS FROM THE GRID BELOW IN THE SPACES UNDER "WHOLE CLASS" OR "PART OF CLASS," AS APPROPRIATE)

	Quantities to be Operated Upon								
Operation	Whole Nos.	Number or Algebra Sentences	Fractions Like	Fractions Unlike	Mixed Nos.	Decimals	Ratio, Percent	☐☐	☐☐
• Numbers/numeration	A1	A2	A3	A4	A5	A6	A7		
• Add	B1	B2	B3	B4	B5	B6	B7	☐☐	☐☐
• Subtract	C1	C2	C3	C4	C5	C6	C7		
• Multiply	D1	D2	D3	D4	D5	D6	D7		
• Divide	E1	E2	E3	E4	E5	E6	E7		
• Combination (+,-,x,/)	F1	F2	F3	F4	F5	F6	F7		
• Estimate	G1	G2	G3	G4	G5	G6	G7		
• Identify equivalents	H1	H2	H3	H4	H5	H6	H7	☐☐	☐☐
• Other	I1	I2	I3	I4	I5	I6	I7		

M5. What did the students primarily do as part of mathematics instruction?		
Listening to explanation or presentation by teacher	1	1
Oral exercises or drill (e.g. to practice mental math)	2	2
Group/class discussion of assignments, problems, new topics	3	3
Individual practice (e.g., seatwork)	4	4
Collaborative work on mathematical projects or problems	5	5
Computer-based activities	6	6
Taking tests or other assessments of mathematics achievement	7	7
Other activities (PLEASE SPECIFY)____________________	8	8

M6. Was any mathematics homework assigned?		
No homework assigned or pending from previous class	0	0
Completion of today's classwork	1	1
New assignment to be done outside of class	2	2
Previous assignment(s) still pending	3	3

M7. What instructional materials were used in mathematics instruction today?		
Published textbook	1	1
Published workbook	2	2
Manipulatives (PLEASE SPECIFY)____________________	3	3
Calculators	4	4
Other (PLEASE SPECIFY)________________________	5	5

M8. Comments?

[20/1-73]

END-OF-THE WEEK COMMENTS

E1. Were students grouped for instruction in reading, writing, other language arts, or mathematics this week? (PLEASE CIRCLE ONE NUMBER IN EACH COLUMN)

	Reading	Writing	O. Lang. Arts	Math
No grouping this week	1	1	1	1
Same groups as last week	2	2	2	2
New groups this week	3	3	3	3

E2. If students were grouped, what was the primary basis for grouping? (PLEASE CIRCLE ONE NUMBER IN EACH COLUMN)

Homogeneous grouping by achievement or ability level	1	1	1	1
Heterogeneous grouping to mix achievement or ability levels	2	2	2	2
Grouping by student interests or topics of study	3	3	3	3
Grouping by students' behavior characteristics	4	4	4	4
Grouping by English language ability	5	5	5	5
Other basis for grouping (PLEASE SPECIFY) ______________________	6	6	6	6

E3. In what ways (if at all) did you individually tailor curriculum or instruction in these subject areas this week for some or all of your class:

Not applicable; no individual tailoring	0	0	0	0
Students worked on the same topics, skills, and materials, but at their own pace	1	1	1	1
Individual students were assigned to work on different skills, topics, materials	2	2	2	2
Individual students were allowed to select their own skills, topics, or materials to work on	3	3	3	3
Other (PLEASE SPECIFY) ______________________	4	4	4	4

E4. Please indicate, for each day of this week, whether there were any departures from the regular schedule of academic instruction. (PLEASE CIRCLE ONE NUMBER IN EACH COLUMN)

	Mon.	Tues.	Wed.	Thurs.	Fri.
Regular academic instruction	1	1	1	1	1
Early dismissal day	2	2	2	2	2
Holiday	3	3	3	3	3
Staff development day	4	4	4	4	4
Field trip	5	5	5	5	5
Snow day or other unusual school closure	6	6	6	6	6
Other departure from regular program (PLEASE SPECIFY)______________________	7	7	7	7	7

E5. Comments: Anything that would help us to understand your log entries for the week (e.g., unusual events, special activities, crises, etc.)?

[20/74-91]

DID YOU REMEMBER TO PUT THE DATE ON THE FRONT COVER OF THE LOG BOOKLET?

THANK YOU!

PLEASE SEND TODAY (FRIDAY) IN THE ENCLOSED SELF-ADDRESSED STAMPED ENVELOPE TO:

Ms. Dorothy Stewart
SRI International, Room B-S143
333 Ravenswood Ave., Menlo Park, CA 94025

UNIT-LEVEL CODING FORM--Final Field Version (2/12/90)

District: ______________________ ID #: ________________ [1/1-10]

School: ______________________

Teacher(s): ______________________

Language Arts ______________________

Mathematics* ______________________

Time of Coding: (CIRCLE ONE)
1 1st unit-level visit
2 2nd unit-level visit
3 3rd unit-level visit [1/11]

School Year: (CIRCLE ONE) 1989-90 1990-91 [1/12-13]

Site Visitor: ______________________

GENERAL INSTRUCTIONS: THIS FORM IS TO BE FILLED OUT FOR EACH CLASSROOM (INTENSIVE OR NONINTENSIVE) THREE TIMES IN THE SCHOOL YEAR (APPROXIMATE TIMING: MID TO LATE FALL, WINTER, EARLY SPRING). THE CODED ITEMS REPRESENT KEY FEATURES OF THE CURRICULUM AND INSTRUCTION IN THE CLASSROOM WHICH YOU HAVE BEEN STUDYING.

IN ASSIGNING CODES TO ITEM RESPONSES, DRAW ON ALL RELEVANT DATA SOURCES--OBSERVATIONS (FOR INTENSIVELY STUDIED CLASSROOMS), INTERVIEWS (TEACHER AND STUDENT), EXAMINATION OF MATERIALS, AND BACKGROUND DATA SOURCES. THE CODES YOU ASSIGN REFLECT A SYNTHESIS OF EVIDENCE, AND THUS IN MANY INSTANCES INVOLVE INFERENCES WHICH YOU WILL MAKE FOLLOWING GUIDELINES AND DECISION RULES THAT WILL BE DEVELOPED JOINTLY. WHERE IT IS USEFUL TO DO SO, WE HAVE TRIED TO INDICATE ON THE CODING FORM KEY CONSIDERATIONS IN ASSIGNING CODES.

DO THE CODING THOUGHTFULLY AND CAREFULLY. BY THE TIME YOU GET TO THIS STEP IN DATA REDUCTION AND ANALYSIS, THE APPROPRIATE CODE FOR EACH ITEM SHOULD BE CLEAR TO YOU--TWO TO THREE HOURS SHOULD BE SUFFICIENT FOR THE ENTIRE FORM.

THIS FORM WILL NOT BE REVISED AGAIN THIS YEAR; HOWEVER, AMBIGUITIES WILL UNDOUBTEDLY ARISE IN PARTICULAR CASES. MAKE NOTES IN THE MARGIN WHEREVER YOU FEEL THE NEED.

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* If a different teacher handles mathematics.

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UNIT-LEVEL CODING FORM--Final Field Version (2/12/90)

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[*] First Unit-level Coding Form only; however, missing data can be filled in later in the year--therefore this section has been included with the second unit-level coding form.

A. The Classroom(s), Data Sources, and Time Period to Which Codes Refer

A1. Which study subsample is this/these classroom(s) in?

1 Intensively studied classrooms [1/14]
2 Nonintensively studied classrooms

A2. On what data sources are you basing this coding? (CIRCLE ALL THAT APPLY)

1 Observations (in this classroom)?
2 Observations (in supplemental program rooms)?
3 Unit-level teacher interview(s)
4 Interview with supplemental program teacher(s) [1/15-21]
5 Examination of materials--regular classroom
6 Examination of materials--supplemental programs
7 Interviews with students

A3. Your coding should refer to this/these classroom(s) over an approximately two-week period of time that includes the time(s) of your observation (if any).

a. When did the period of time you are referring to start? [1/22-27]

____/____/____

b. How many days of teaching are included in the period to which your codes refer (exclude holidays, staff development days, etc.)?

__________ [1/28-29]

A4. On which day(s) during the two-week period did your observation(s) fall? (CIRCLE ALL THAT APPLY) [Note: Your observations for mathematics and language arts, in regular or supplemental classrooms, may have fallen on different days.]

												Not applicable; no observation at all	
Regular Classroom													
a. Mathematics	Day	01	02	03	04	05	06	07	08	09	10	00	
b. Language Arts*	Day	01	02	03	04	05	06	07	08	09	10	00	
Supplemental Program Rooms													
c. Mathematics	Day	01	02	03	04	05	06	07	08	09	10	00	
d. Language Arts*	Day	01	02	03	04	05	06	07	08	09	10	00	[1/30-117]

A5. Since the beginning of the school year, how many children have (a) left the class permanently and (b) been added to the class?

	For Math	For Lang. Arts	
a. Left the class	________	________	
b. Been added to the class	________	________	[2/11-18]

A6. Was language arts and mathematics taught in this classroom under a departmentalized arrangement (different teacher)?

1 No
2 Yes--same classroom group for both subjects, different teacher(s)
3 Yes--same teacher, different classroom group(s) for each subject
4 Other departmentalized arrangement (SPECIFY) ______________________________

[2/19-22]

---

[*] Includes reading, writing, other language arts, or some combination.

A7. For this two-week period, list the approximate number of children who received supplemental instruction in language arts or mathematics outside the regular classroom from the following types of programs. (ENTER YOUR BEST ESTIMATE FOR EACH APPLICABLE COLUMN; IF "0", LEAVE BLANK)

	Language Arts	Mathematics
Not applicable; no supplemental instruction out of the room	0	0
Chapter 1-supported pull-out rooms, resource rooms, etc.	___ children	___ children
Special education resource rooms		
Other supplemental program setting(s) (SPECIFY)	___	___
______________________________	___	___
______________________________	___	___

[2/23-48]

A8. If four or more children received language arts instruction from any particular supplemental program out of the regular classroom, note the program and setting, and indicate the number of children who participate.

	Supplemental Program and Setting (PLEASE SPECIFY)	Number of Children
Room 1	______________________________	______
Room 2	______________________________	______

[2/49-56]

A9. If four or more children received mathematics instruction from any particular supplemental program out of the regular classroom, note the program and setting, and indicate the number of children who participate.

	Supplemental Program and Setting (PLEASE SPECIFY)	Number of Children
Room 1	______________________________	______
Room 2	______________________________	______

[2/57-64]

A10. Which of the following special conditions apply to this classroom? (CIRCLE ALL THAT APPLY)

1 Bilingual instruction
2 Instruction in one subject only
3 Change of teacher since the beginning of the year
4 Change of teacher since last coding form
5 Prolonged absence (e.g., due to illness) of teacher since the beginning of the year
6 Cross-graded classroom
7 Other special conditions (SPECIFY)

____

____

[2/65-74]

A11. On what primary basis were children assigned to this classroom? (CIRCLE ONE NUMBER ONLY IN EACH COLUMN)

Children were assigned to this class...	Language Arts	Mathematics
Homogeneously by ability or achievement level primarily	1	1
Heterogeneously by ability or achievement level primarily	2	2
Heterogeneously by various factors--e.g., achievement, race, behavior	3	3
Other primary basis for class assignment (SPECIFY)	7	7
______________________________		
Don't know	8	8

[2/75-79]

[NOTE: Code both columns, even if the same basis of assignment applies. The item allows you to indicate if there is whole class regrouping for one or the other subject area.]

A12. If classes were assigned homogeneously on the basis of ability or achievement primarily--for either subject area or both--what is the classroom's level of ability/achievement relative to other classrooms at this school? (CIRCLE ONE NUMBER IN EACH COLUMN)

	Language Arts	Mathematics
Not applicable; classes are not assigned on ability	0	0
High achievement/ability level	1	1
Middle achievement/ability level	2	2
Low achievement/ability level	3	3

[2/80-81]

B. Language Arts*: Overview and Organization

B1. **What kinds of instructional staff were involved in teaching language arts to the students in this class during this two-week period?** (CIRCLE ALL THAT APPLY IN EACH COLUMN)

	Reading	Writing (Composing Text)	Other Aspects of Language Arts	
a. Regular Classroom				
Regular classroom teacher	1	1	1	
A second regular teacher (e.g., under departmentalized or team arrangement)	2	2	2	
In-class teacher aide	3	3	3	
A second in-class aide	4	4	4	
Parent volunteer	5	5	5	
Other in-class teacher (SPECIFY)	6	6	6	[2/82-102]
______________________________				
b. Supplemental Program Room #1 (AS SPECIFIED IN A8 ABOVE)				
Not applicable	0	0	0	
Specialist	1	1	1	
Aide	2	2	2	
Other (SPECIFY)	3	3	3	[2/103-117]
______________________________				
c. Supplemental Program Room #2 (AS SPECIFIED IN A8 ABOVE)				
Not applicable	0	0	0	
Specialist	1	1	1	
Aide	2	2	2	
Other (SPECIFY)	3	3	3	[2/118-132]
______________________________				

Organization of Regular Language Arts Program

B2. **Approximately how many minutes per day were allocated to language arts instruction during this two-week period?**

____________ minutes per day [3/11-13]

[Consider full instructional days, not minimum days or those interrupted by assemblies, earthquakes, or other unusual events]

B3. **On average, what percentage of total language arts time was allocated to reading, writing, and other aspects of language arts during this two-week period?**

Reading __________ %

Writing __________ %

Other Language Arts __________ % [3/14-22]

[Note: These percents may sum to more than 100% if different aspects of language arts are integrated and thus taking place simultaneously.]

---

* "Language arts" subsumes reading, writing (composing text), and other aspects of language arts (e.g., language mechanics, oral communication).

B4. The curriculum being taught during this two-week period (e.g., as defined by teacher-developed units or language arts text series) has been in use by this teacher for how many years?

Reading ___________ years

Writing ___________ years

Other Language Arts ___________ years

[3/23-28]

[Note: If this is the first year, code = 1; if last year was the first year, code = 2; etc. If the curriculum changes every year--i.e., teachers generate it as they go along--code = 1.]

B5. In what ways were reading, writing, and other language arts instruction integrated with each other during this two-week period? (CIRCLE ALL THAT APPLY)

0 The three aspects of language arts instruction were not integrated in any way

1 Two or more of the three aspects of language arts instruction took place in the same scheduled lesson periods during the school day

2 Students wrote about what they were reading; reading was used as a source of ideas for writing assignments

3 Students read material that they or others had written

4 Instruction in language mechanics took place during reading (e.g., as groups read through a text with the teacher)

5 Language mechanics was taught as part of writing instruction

6 Homework assignments combined reading, writing, and/or other language arts instruction in some way

7 Instruction in oral communication skills was used as a device to stimulate writing (e.g., as prewriting) or to enhance reading skills (e.g., to help with fluency practice)

8 Other form of integration (SPECIFY) ______________________________

[3/29-40]

B6. In what ways were reading, writing, and/or other language arts instruction integrated with other subject areas during the two-week period? (CIRCLE ALL THAT APPLY)

	Math	Social Studies	Science, Health	Music, Art
No integration	0	0	0	0
In the indicated subject(s), students ...				
Read books or other written material	1	1	1	1
Wrote reports or other forms of text	2	2	2	2
Practiced reading or language mechanics	3	3	3	3
Other form of integration (SPECIFY) ______________	4	4	4	4
Insufficient data	8	8	8	8

[3/41-67]

B7. How was language arts instruction in the regular classroom organized during the two-week period? (CIRCLE ALL THAT APPLY FOR EACH COLUMN)

	Reading	Writing	Other Language Arts	
Not applicable; no instruction during the two weeks in this subject	0	0	0	
Whole class instruction--ungrouped: Part or all of the time, the class was taught together or worked together on the same tasks (e.g., individual seatwork)	1	1	1	
Whole class instruction--grouped: Part or all of the time, the class was taught together or worked together on the same tasks, but in groups (e.g., students in clustered seating working on the same tasks)	2	2	2	
Stable small group instruction: Part or all of the time, students worked in assigned groups that did not change across the time period, on tasks that were in some degree tailored to the group	3	3	3	
Changeable or ad hoc small group instruction: Part or all of the time, students worked in groups that changed in composition or were temporary, on tasks that were in some degree tailored to the group	4	4	4	
Partially individualized instruction: Part or all of the time, certain students worked on individually tailored curricula	5	5	5	
Fully individualized instruction: Part or all of the time period, the whole class worked on individually tailored curricula	6	6	6	
Other form of organization (PLEASE SPECIFY) ________________________________	7	7	7	[3/68-94]

B8. If students were grouped (within class) for language arts instruction, what was the primary basis for grouping? (PLEASE CIRCLE ONE NUMBER IN EACH COLUMN)

	Reading	Writing	Other Language Arts	
Not applicable; no grouping	0	0	0	
Homogeneous grouping by achievement or ability level	1	1	1	
Heterogeneous grouping to mix achievement or ability levels	2	2	2	
Grouping by student interests or topics of study	3	3	3	
Grouping by students' ethnic/racial characteristics	4	4	4	
Grouping by students' behavior characteristics	5	5	5	
Grouping by English language ability	6	6	6	
Other basis for grouping (PLEASE SPECIFY) ____________________	7	7	7	[3/95-100]

B9. In what ways (if at all) did the teacher individually tailor curriculum or instruction in these subject areas for some or all of the class? (PLEASE CIRCLE ALL THAT APPLY IN EACH COLUMN)

	Reading	Writing	Other Language Arts	
Not applicable; no individual tailoring	0	0	0	
Students worked on the same topics, skills, or materials, but at their own pace	1	1	1	
Individual students were assigned to work on different skills, topics, materials	2	2	2	
Individual students were allowed to select their own skills, topics, or materials to work on	3	3	3	
Other (PLEASE SPECIFY) ____________________	4	4	4	[3/101-118]

Organization of Supplemental Language Arts Programs

B10. Was there language arts instruction in supplemental programs--in or outside the regular classroom--during the two-week period for any of the students in the class?

1 Yes
2 No (SKIP TO ITEM B15)

[4/11]

B11. Indicate what aspects of language arts instruction--in or outside the regular classroom--were covered by each type of supplemental program. (CIRCLE ALL THAT APPLY IN EACH COLUMN)

	Chapter 1	Special Education	Other
Reading	1	1	1
Writing	2	2	2
Other language arts instruction	3	3	3

[4/12-20]

B12. Approximately how many students in the classroom (a) participated in each type of supplemental program--in or outside the regular classroom--and (b) missed part or all of the regular language arts instruction during this two-week period because of participation in these programs?

	(a) Participated	(b) Missed
Chapter 1 program	______	______
Special education	______	______
Other supplemental language arts program (SPECIFY) ______	______	______

[4/21-35]

B13. Supplemental language arts instruction offered to students in or outside this classroom this class takes which of the following form(s) primarily? (CIRCLE ALL THAT APPLY IN EACH COLUMN)

	Chapter 1	Special Education	Other
Not applicable; does not serve this room	0	0	0
In-class instruction (aides)	1	1	1
In-class instruction (language arts specialists, e.g., paid for by Chapter 1 or other programs)	2	2	2
Pull-out from language arts (children miss some, but not all, of regular class language arts	3	3	3
Pull-out from other time period (children miss none of regular class language arts)	4	4	4
Replacement instruction (children miss all of regular class language arts	5	5	5
Add-on instruction (offered at times outside the regular academic day or term, e.g., after school, intersession)	6	6	6
Other arrangement (SPECIFY) ______	7	7	7

[4/36-62]

B14. Students in this classroom who receive supplemental language arts instruction in or outside the regular classroom participate (a) how many times per week, (b) for how many minutes per session (on average)?

	(a) Sessions/week	(b) Minutes/session	
Outside the regular classroom			
a. Room #1 (AS SPECIFIED IN A8)	_______ sessions	_______ minutes	
b. Room #2 (AS SPECIFIED IN A8)	_______ sessions	_______ minutes	
Inside the regular classroom	_______ sessions	_______ minutes	[4/63-77]

Materials and Language Environment

B15. What forms of reading matter were (in principle) available to students in regular and supplemental program classrooms? (CIRCLE ALL THAT APPLY)

	Regular Class	Supp. Room 1	Supp. Room 2	
No reading matter available	0	0	0	
Class library of trade books, children's literature	1	1	1	
Reference books	2	2	2	
Children's periodicals	3	3	3	
Teacher-made written material* (SPECIFY) ____________________ ____________________	4	4	4	
Student-made written material* (SPECIFY) ____________________ ____________________	5	5	5	
Access to school library	6	6	6	
Other (SPECIFY) ____________________ ____________________	7	7	7	
Insufficient data	8	8	8	[4/78-113]

B16. Indicate the richness (combining amount and variety) of visually displayed written language in the regular and supplemental rooms. (CIRCLE ONE NUMBER IN EACH COLUMN)

	Regular Class	Supp. Room 1	Supp. Room 2	
Very rich: A majority of the wall space (or other visual display space) is covered with written words or text (signs, posters, spelling lists, students' work, clipped articles, quotations, etc.)	1	1	1	
Moderately rich: One-quarter to a half of the wall or display space is covered with written words or text	2	2	2	
Moderately poor: There are a few written messages on the walls, but less than a quarter of the walls or display space have written words or text	3	3	3	
Very poor: There is virtually no written language to be seen (besides the ubiquitous letter forms for handwriting practice)	4	4	4	
Insufficient data	8	8	8	[4/114-116]

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* Include posters or other material on classroom walls that is written by teachers or students.

C. Observed Language Arts Instruction in the Regular Classroom

FOR NON-INTENSIVE CLASSROOMS, SKIP THIS SECTION IF YOU DID NO OBSERVATIONS DURING THIS ROUND OF DATA COLLECTION.

C1. On which days did you observe language arts instruction in the regular classroom?

	Reading	Writing	Other Lang. Arts	
First observation:	___/___/___	___/___/___	___/___/___	
Second observation: (intensive classrooms only)	___/___/___	___/___/___	___/___/___	[5/11-46]

C2. How many students were in the class (include students who may miss part of the language arts period due to supplemental programs)?

	Reading	Writing	Other Lang. Arts	
First observation:	______	______	______	
Second observation:	______	______	______	[5/47-64]

Reading Log Items

THE FOLLOWING ITEMS ARE VIRTUALLY IDENTICAL TO THE ONES TEACHERS FILL OUT IN THEIR DAILY TEACHER LOGS. IF NO READING INSTRUCTION ON EITHER DAY, SKIP TO WRITING LOG ITEMS.

C3. On what aspects of reading mechanics did instruction (including assigned homework) focus? (CIRCLE ALL THAT APPLY IN EACH COLUMN)

		1st Observation		2nd Observation		
		Whole Class	Part of Class	Whole Class	Part of Class	
Explicit phonics (sounds taught in isolation from words)		1	1	1	1	
Implicit phonics	-- As part of reading	2	2	2	2	
	Out of context	3	3	3	3	
Whole word recognition*	-- As part of reading	4	4	4	4	
	Out of context	5	5	5	5	
Word analysis*	-- As part of reading	6	6	6	6	
	Out of context	7	7	7	7	
Fluency practice (e.g., oral reading for fluency)		8	8	8	8	
Other (PLEASE SPECIFY) ______________________________		9	9	9	9	[5/65-103]

[*NOTE: Reading lessons often start with vocabulary discussion or drill. Code here if vocabulary is taught for sight recognition or as an exercises in word analysis. Otherwise, code under Other Language Arts Item C13.]

C4. On what did comprehension instruction (including assigned homework) focus? (CIRCLE ALL THAT APPLY IN EACH COLUMN)

Recalling information; locating information in text	1	1	1	1	
Literal understanding of text; summarizing text	2	2	2	2	
Deeper understanding of text ("reading between the lines")	3	3	3	3	
Learning strategies for comprehending what is read	4	4	4	4	[5/104-119]

[NOTE: Include in "comprehension instruction," literature lessons/discussions, if aimed at improving comprehension of a particular piece of reading; if these lessons teach about literary form or genre more generally, include in "Other Language Arts" Item C14. The same lesson may be coded in more than one place.]

C5. What did the students mainly do as part of reading instruction? (CIRCLE ALL THAT APPLY IN EACH COLUMN)

	1st Observation		2nd Observation		
	Whole Class	Part of Class	Whole Class	Part of Class	
Listening to explanation or presentation by teacher	01	01	01	01	
Oral reading (e.g., in small group)	02	02	02	02	
Partner reading	03	03	03	03	
Reading individually to teacher or aide (not in group)	04	04	04	04	
Oral exercises or drill (e.g., to practice reading mechanics	05	05	05	05	
Silent exercises or drill (e.g., in workbook)	06	06	06	06	
Group/class discussion (e.g., to explore meaning of text)	07	07	07	07	
Silent reading	08	08	08	08	
Listening to tapes or stories being read aloud	09	09	09	09	
Taking tests or other assessments of reading ability	10	10	10	10	
Other reading activities (PLEASE SPECIFY) ______	11	11	11	11	[6/11-101]

C6. Was any reading homework assigned? (CIRCLE ALL THAT APPLY IN EACH COLUMN)

No homework	0	0	0	0	
Completion of work begun in class today	1	1	1	1	
New assignment to be done outside of class	2	2	2	2	
Previous assignment(s) still pending	3	3	3	3	[6/102-117]

[Note: "New" does not necessarily mean material that is unfamiliar to the children. Treat "new assignments" as those that are "newly given" as homework, even if they involve reinforcement of past lessons.]

C7. What kinds of materials were used in reading instruction? (CIRCLE ALL THAT APPLY IN EACH COLUMN)

Published basal reader	1	1	1	1	
Trade books	2	2	2	2	
Reading mechanics workbook	3	3	3	3	
Text created by children	4	4	4	4	
Other (PLEASE SPECIFY) ______	5	5	5	5	[7/11-33]

Writing Log Items

IF NO INSTRUCTION IN WRITING (I.E., COMPOSED TEXT) ON EITHER DAY, SKIP TO OTHER LANGUAGE ARTS ITEMS.

C8. On what aspects of writing (including assigned homework) did instruction focus? (CIRCLE ALL THAT APPLY IN EACH COLUMN)

Prewriting	1	1	1	1	
Drafting text	2	2	2	2	
Revising text (altering the substantive meaning)	3	3	3	3	
Editing text (altering the mechanics of the text)	4	4	4	4	[7/34-49]

C9. What type(s) of writing did students do? (CIRCLE ALL THAT APPLY IN EACH COLUMN)

Essay (persuasive or analytic writing)	1	1	1	1	
Other informative writing (report, summary, note taking)	2	2	2	2	
Imaginative writing (poem, story, play)	3	3	3	3	
Personal writing (journal, letter)	4	4	4	4	
Other (PLEASE SPECIFY) ______	5	5	5	5	[7/50-72]

C10. What did the students mainly do as part of writing instruction? (CIRCLE ALL THAT APPLY IN EACH COLUMN)

Listen to explanation or presentation by teacher	1	1	1	1	
Generate ideas for writing (e.g., in small group)	2	2	2	2	
Work on student's own text (with paper and pen or pencil)	3	3	3	3	
Give feedback to other children about their writing	4	4	4	4	
Have conference with teacher or aide about writing	5	5	5	5	
Use computer to draft, revise, or edit text	6	6	6	6	
Create visuals or other materials to accompany text	7	7	7	7	
Other writing activities (PLEASE SPECIFY) ______	8	8	8	8	[7/73-107]

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	1st Observation		2nd Observation		
	Whole Class	Part of Class	Whole Class	Part of Class	

C11. What was done with students' writing? (CIRCLE ALL THAT APPLY IN EACH COLUMN)

Kept by students to complete at a later time	1	1	1	1	
Kept (in completed form) for students' own use	2	2	2	2	
Given to the teacher for review without grading or correcting	3	3	3	3	
Given to teacher for grading or correcting	4	4	4	4	
Read or displayed to other students in class	5	5	5	5	
Sent or shown to others outside of class	6	6	6	6	
Other use (PLEASE SPECIFY) ______________________________	7	7	7	7	[8/11-41]

C12. Was any writing homework assigned? (CIRCLE ALL THAT APPLY IN EACH COLUMN)

No homework	0	0	0	0	
Completion of writing done in class today	1	1	1	1	
New assignment to be done outside of class	2	2	2	2	
Previous assignment(s) still pending	3	3	3	3	[8/42-57]

Other Language Arts Log Items

IF NO OTHER LANGUAGE ARTS INSTRUCTION ON EITHER DAY, SKIP TO ADDITIONAL ITEMS ON OBSERVED INSTRUCTION

C13. On what aspects of language mechanics did instruction (including assigned homework) focus? (CIRCLE ALL THAT APPLY IN EACH COLUMN)

Handwriting	01	01	01	01	
Spelling	02	02	02	02	
Punctuation; capitalization	03	03	03	03	
Vocabulary -- As part of writing or reading	04	04	04	04	
-- Out of context	05	05	05	05	
Sentence structure -- As part of writing or reading	06	06	06	06	
-- Out of context	07	07	07	07	
Parts of speech -- As part of writing or reading	08	08	08	08	
-- Out of context	09	09	09	09	
Other (PLEASE SPECIFY) ______________________________	10	10	10	10	[9/11-93]

C14. Did instruction (including assigned homework) focus on literary forms, genre, analysis, etc.? (CIRCLE ALL THAT APPLY IN EACH COLUMN)

No	0	0	0	0	
Yes, in conjunction with what students were reading or writing	1	1	1	1	
Yes, out of context	2	2	2	2	[10/11-22]

[NOTE: Code "yes" here if instruction was meant to teach in general terms about how stories are structured, the characteristics of nonfiction, etc. This teaching may have used a particular story, essay, etc., as a starting point. See note for Item C4.)

C15. On what did instruction in oral communication and expression (including ESL) focus? (CIRCLE ALL THAT APPLY IN EACH COLUMN)

Oral self-expression skills	1	1	1	1	
Particular forms of public expression (e.g., drama, debate)	2	2	2	2	
Pronunciation (second language learners)	3	3	3	3	
Vocabulary development (second language learners)	4	4	4	4	
Sentence pattern learning (second language learners)	5	5	5	5	
Fluency of expression (second language learners)	6	6	6	6	
Other oral communication/expression skills (PLEASE SPECIFY)	7	7	7	7	[10/23-53]

____

[Note: Include English dialect speakers as "second language learners" if explicit ESL-like instruction is provided from them.]

	1st Observation		2nd Observation		
	Whole Class	Part of Class	Whole Class	Part of Class	

C16. What did the students mainly do as part of other language arts instruction? (CIRCLE ALL THAT APPLY IN EACH COLUMN)

Listening to explanation of presentation by teacher	1	1	1	1	
Oral exercises or drill (e.g., to practice oral skills)	2	2	2	2	
Dramatization or role play	3	3	3	3	
Student oral presentation/expression to class or group	4	4	4	4	
Listening to tapes, story-telling by teacher, etc.	5	5	5	5	
Working on written exercises (e.g., in workbook)	6	6	6	6	
Copying notes, letters, etc.; taking dictation	7	7	7	7	
Taking tests (oral or written) of oral or written skills	8	8	8	8	
Other oral or written language arts activities (PLEASE SPECIFY) ______________________	9	9	9	9	[10/54-92]

C17. Was any homework (in language mechanics, other language arts) assigned? (CIRCLE ALL THAT APPLY IN EACH COLUMN)

No homework	0	0	0	0	
Completion of work begun in class today	1	1	1	1	
New assignment to be done outside of class	2	2	2	2	
Previous assignment(s) still pending	3	3	3	3	[11/11-26]

C18. What instructional materials were used in other language arts instruction? (CIRCLE ALL THAT APPLY IN EACH COLUMN)

Language arts textbook	1	1	1	1	
Language mechanics workbook	2	2	2	2	
Visual aids (e.g., for exercises in oral expression)	3	3	3	3	
Other (PLEASE SPECIFY) ______________________	4	4	4	4	[11/27-45]

Additional Items on Observed Language Arts Instruction in Regular Classroom

C19. Excluding transitions (and other non-academic time before lessons begin), how many minutes were actually spent (a) in reading, writing, and other language arts instruction; (b) in language arts instruction as a whole; and (c) by students reading or writing text?

Actual time spent ...

a. For different aspects of language arts				
Reading instruction	____	____ min.	____	____ min.
Writing instruction	____	____ min.	____	____ min.
Other Language Arts instruction	____	____ min.	____	____ min.
b. For all aspects of language arts	____	____ min.	____	____ min.
c. By students				
Reading text (oral and silent)	____	____ min.	____	____ min.
Writing (composed) text	____	____ min.	____	____ min.
Completing written seatwork (e.g., mechanics exercises, noncomposed text)	____	____ min.	____	____ min.

[11/46-129]

[NOTE: 1. Where different aspects of language arts are integrated with one another, the total for subparts of (a) may exceed the total minutes in the day. A duplicated count of minutes in "writing" and "other language arts" is thus okay if the same activity segments were spent doing both.
2. Make your best estimates--it will be impossible to get precise measures when instruction stops and starts a lot. The main idea is to get one step more precise than simply listing scheduled period times.]

Additional Reading Items

C20. What kind(s) of text were children reading (and/or having read to them*) during observed instruction? (CIRCLE ALL THAT APPLY)

	1st Observation		2nd Observation		
	Whole Class	Part of Class	Whole Class	Part of Class	
Not applicable; no text was read	0	0	0	0	
Informative text (reports, essays, descriptions, etc.)	1	1	1	1	
Narrative--basal stories developed to teach reading	2	2	2	2	
Narrative--stories for general audience (may be trade book or in basal anthology)	3	3	3	3	
Poems	4	4	4	4	
Drama	5	5	5	5	
Reading mechanics exercises (e.g., in workbook, on ditto)	6	6	6	6	
Student-generated or student-dictated text	7	7	7	7	
Other forms of text (SPECIFY) ____________________	8	8	8	8	[12/11-49]

C21. Did students exercise any choice in what they read? (CIRCLE ALL THAT APPLY)

	1st Observation		2nd Observation		
	Whole Class	Part of Class	Whole Class	Part of Class	
Not applicable; no text was read	0	0	0	0	
No	1	1	1	1	
Yes, from options prepared by teacher	2	2	2	2	
Yes, complete choice of reading material	3	3	3	3	[12/50-65]

C22. What balance was there between comprehension-oriented instruction and mechanics-oriented instruction? (CIRCLE ONE NUMBER IN EACH APPLICABLE COLUMN)

	1st Observation		2nd Observation		
	Whole Class	Part of Class	Whole Class	Part of Class	
Not applicable; no reading instruction	0	0	0	0	
Reading instruction was...					
Completely devoted to comprehension	1	1	1	1	
Mostly devoted to comprehension	2	2	2	2	
About evenly divided between comprehension and mechanics	3	3	3	3	
Mostly devoted to reading mechanics	4	4	4	4	
Completely devoted to reading mechanics	5	5	5	5	[12/66-69]

C23. In what ways were children taught how to comprehend what they were reading? (CIRCLE ALL THAT APPLY)

	1st Observation		2nd Observation		
	Whole Class	Part of Class	Whole Class	Part of Class	
No comprehension teaching	0	0	0	0	
Children were...					
Asked to recall plot, details	1	1	1	1	
Asked to summarize what they had read	2	2	2	2	
Given advance organizers or context for understanding what will be read	3	3	3	3	
Taught or shown how to use context clues	4	4	4	4	
Taught or shown how to make predictions about text being read	5	5	5	5	
Asked to analyze the text being read	6	6	6	6	
Other (SPECIFY) ____________________	7	7	7	7	[12/70-104]

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[*] Include material teacher reads aloud to class.

C24. In what ways were students given a context for understanding the material they were reading (e.g., background information, orienting questions, etc.)? (CIRCLE ALL THAT APPLY)

	1st Observation		2nd Observation		
	Whole Class	Part of Class	Whole Class	Part of Class	
No effort to give students a context for reading	0	0	0	0	
Class discussion about topic of reading	1	1	1	1	
Teacher presentation about topic of reading	2	2	2	2	
Review of previous related reading	3	3	3	3	
Teacher explanation with examples or analogies drawn from the students' home and community environment	4	4	4	4	
Other (SPECIFY) ____________________	5	5	5	5	[13/11-37]

C25. In what ways did instruction connect reading or writing to students' base of experience or backgrounds? (CIRCLE ALL THAT APPLY)

a. Reading

	1st Observation		2nd Observation		
	Whole Class	Part of Class	Whole Class	Part of Class	
No clear connections were made	0	0	0	0	
Teacher explanation with examples or analogies drawn from students' lives	1	1	1	1	
Topic or material explicitly related to children's lives	2	2	2	2	
Class discussion of personal meaning of what was read	3	3	3	3	
Other attempts to connect with children's backgrounds (SPECIFY) ____________________	4	4	4	4	[13/38-60]

b. Writing

	1st Observation		2nd Observation		
	Whole Class	Part of Class	Whole Class	Part of Class	
No connection with students' backgrounds	0	0	0	0	
Students wrote about themselves or their experiences	1	1	1	1	
Discussion aimed at personal or cultural implications of writing topics	2	2	2	2	
Prewriting activities highlighted students' backgrounds	3	3	3	3	
Other (SPECIFY) ____________________	4	4	4	4	[13/61-83]

Additional Writing Items

	1st Observation		2nd Observation		
	Whole Class	Part of Class	Whole Class	Part of Class	
C26. What particular genre(s) of text writing were students working on? (CIRCLE ALL THAT APPLY)					
No text writing	00	00	00	00	
Composed extended writing*					
Informative/Essay	01	01	01	01	
Informative/Report	02	02	02	02	
Informative/Summary	03	03	03	03	
Informative/Note taking	04	04	04	04	
Imaginative/Story	05	05	05	05	
Imaginative/Poem	06	06	06	06	
Imaginative/Play	07	07	07	07	
Personal/Journal	08	08	08	08	
Personal/Letter, etc.	09	09	09	09	
Other (SPECIFY) ______________________	10	10	10	10	
Composed restricted writing*--e.g., question-and-answer text, writing in tightly prescribed formats)					
(SPECIFY) ______________________	11	11	11	11	[14/11-112]
C27. For what audience(s) were students writing? (CIRCLE ALL THAT APPLY)					
a. Informative writing (extended)*					
Self	1	1	1	1	
Each other	2	2	2	2	
Teacher as evaluator	3	3	3	3	
Teacher as nonevaluative reviewer	4	4	4	4	
Other (SPECIFY) ______________________	5	5	5	5	[15/11-33]
b. Imaginative writing (extended)*					
Self	1	1	1	1	
Each other	2	2	2	2	
Teacher as evaluator	3	3	3	3	
Teacher as nonevaluative reviewer	4	4	4	4	
Other (SPECIFY) ______________________	5	5	5	5	[15/34-56]
c. Personal/other writing (extended)*					
Self	1	1	1	1	
Each other	2	2	2	2	
Teacher as evaluator	3	3	3	3	
Teacher as nonevaluative reviewer	4	4	4	4	
Other (SPECIFY) ______________________	5	5	5	5	[15/57-79]
d. Composed restricted* writing					
Self	1	1	1	1	
Each other	2	2	2	2	
Teacher as evaluator	3	3	3	3	
Teacher as nonevaluative reviewer	4	4	4	4	
Other (SPECIFY) ______________________	5	5	5	5	[15/80-102]

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* We are particularly interested in writing instruction that concerns "extended" text--that is, where students have the chance to express thoughts in an elaborated way, with room for shaping the written product in various ways. This is contrasted with "restricted" text, which provides relatively little room for elaboration. Noncomposed text (dictated by the teacher or copied) should be coded under "Other Language Arts."

C28. What degree of choice did students exercise over the topic and form of the text writing they did? (CIRCLE ALL THAT APPLY FOR EACH APPLICABLE COLUMN)

a. Informative writing

	1st Observation Whole Class	1st Observation Part of Class	2nd Observation Whole Class	2nd Observation Part of Class	
The students...					
Exercised little or no choice	0	0	0	0	
Chose the content within assigned topic	1	1	1	1	
Chose the topic from a list of possible topics	2	2	2	2	
Invented their own topic to write about	3	3	3	3	
Chose the genre or form of writing	4	4	4	4	
Chose whether or not to write	5	5	5	5	[16/11-34]

b. Imaginative writing

	1st Observation Whole Class	1st Observation Part of Class	2nd Observation Whole Class	2nd Observation Part of Class	
The students...					
Exercised little or no choice	0	0	0	0	
Chose the content within assigned topic	1	1	1	1	
Chose the topic from a list of possible topics	2	2	2	2	
Invented their own topic to write about	3	3	3	3	
Chose the genre or form of writing	4	4	4	4	
Chose whether or not to write	5	5	5	5	[16/35-58]

c. Personal/other writing

	1st Observation Whole Class	1st Observation Part of Class	2nd Observation Whole Class	2nd Observation Part of Class	
The students...					
Exercised little or no choice	0	0	0	0	
Chose the content within assigned topic	1	1	1	1	
Chose the topic from a list of possible topics	2	2	2	2	
Invented their own topic to write about	3	3	3	3	
Chose the genre or form of writing	4	4	4	4	
Chose whether or not to write	5	5	5	5	[16/59-82]

[Note: This item is about composed extended text. By definition, composed restricted text offers students no choice over topic or form.]

C29. In writing text, what relative emphasis was placed on accuracy (correct language mechanics) versus meaningful communication? (CIRCLE ONE NUMBER FOR A, B, C, AND D IN EACH COLUMN)

a. Informative writing (extended)

	1st Observation Whole Class	1st Observation Part of Class	2nd Observation Whole Class	2nd Observation Part of Class	
Not applicable; no informative writing	0	0	0	0	
Primary emphasis on accuracy	1	1	1	1	
Emphasis on both accuracy and meaningful communication	2	2	2	2	
Primary emphasis on meaningful communication	3	3	3	3	[16/83-86]

b. Imaginative writing (extended)

	1st Observation Whole Class	1st Observation Part of Class	2nd Observation Whole Class	2nd Observation Part of Class	
Not applicable; no imaginative writing	0	0	0	0	
Primary emphasis on accuracy	1	1	1	1	
Emphasis on both accuracy and meaningful communication	2	2	2	2	
Primary emphasis on meaningful communication	3	3	3	3	[16/87-90]

c. Personal/other writing (extended)

	1st Observation Whole Class	1st Observation Part of Class	2nd Observation Whole Class	2nd Observation Part of Class	
Not applicable; no personal/other writing	0	0	0	0	
Primary emphasis on accuracy	1	1	1	1	
Emphasis on both accuracy and meaningful communication	2	2	2	2	
Primary emphasis on meaningful communication	3	3	3	3	[16/91-94]

d. Restricted writing (SPECIFY) ______________________ [16/95-97]

	1st Observation Whole Class	1st Observation Part of Class	2nd Observation Whole Class	2nd Observation Part of Class	
Not applicable; no restricted writing	0	0	0	0	
Primary emphasis on accuracy	1	1	1	1	
Emphasis on both accuracy and meaningful communication	2	2	2	2	
Primary emphasis on meaningful communication	3	3	3	3	[16/98-101]

Additional Items on Language Arts Overall

C31. How did students respond to language arts instruction? (CIRCLE ONE NUMBER FOR A, B, C, AND D IN EACH COLUMN)

	1st Observation		2nd Observation		
	Whole Class	Part of Class	Whole Class	Part of Class	
a. Reading instruction					
Not applicable; no reading instruction	0	0	0	0	
Consistent high engagement	1	1	1	1	
Moderately high engagement	2	2	2	2	
Intermittent engagement	3	3	3	3	
Moderately low engagement	4	4	4	4	
Consistent low engagement	5	5	5	5	[16/102-105]
b. Writing instruction					
Not applicable; no writing instruction	0	0	0	0	
Consistent high engagement	1	1	1	1	
Moderately high engagement	2	2	2	2	
Intermittent engagement	3	3	3	3	
Moderately low engagement	4	4	4	4	
Consistent low engagement	5	5	5	5	[16/106-109]
c. Other language arts instruction					
Not applicable; no other language arts instruction	0	0	0	0	
Consistent high engagement	1	1	1	1	
Moderately high engagement	2	2	2	2	
Intermittent engagement	3	3	3	3	
Moderately low engagement	4	4	4	4	
Consistent low engagement	5	5	5	5	[16/110-113]

[NOTE: Combine the level of engagement with the proportion of the class engaged. "Consistently high" = Nearly all of the class engaged nearly all of the time; "Moderately" = a majority of the class engaged most of the time; "Intermittent" = mixed pattern, with most children engaged some of the time, but also unengaged for comparable periods of time; or half of the class engaged throughout, the other half not engaged much; etc.]

C32. What kinds of off-task behavior occurred during language arts instruction? (CIRCLE ALL THAT APPLY IN EACH APPLICABLE COLUMN)

	1st Observation		2nd Observation		
	Whole Class	Part of Class	Whole Class	Part of Class	
a. Reading instruction					
Not applicable; no reading instruction	0	0	0	0	
No off-task behavior	1	1	1	1	
Occasional tuning out	2	2	2	2	
Occasional disruptive behaviors	3	3	3	3	
Frequent tuning out	4	4	4	4	
Frequent disruptive behavior	5	5	5	5	
Doing academic activities unrelated to reading	6	6	6	6	
Other (SPECIFY) ______________________	7	7	7	7	[17/11-45]
b. Writing instruction					
Not applicable; no writing instruction	0	0	0	0	
No off-task behavior	1	1	1	1	
Occasional tuning out	2	2	2	2	
Occasional disruptive behaviors	3	3	3	3	
Frequent tuning out	4	4	4	4	
Frequent disruptive behavior	5	5	5	5	
Doing academic activities unrelated to writing	6	6	6	6	
Other (SPECIFY) ______________________	7	7	7	7	[17/46-80]
c. Other language arts instruction					
Not applicable; no other language arts instruction	0	0	0	0	
No off-task behavior	1	1	1	1	
Occasional tuning out	2	2	2	2	
Occasional disruptive behaviors	3	3	3	3	
Frequent tuning out	4	4	4	4	
Frequent disruptive behavior	5	5	5	5	
Doing academic activities unrelated to other language arts instruction	6	6	6	6	
Other (SPECIFY) ______________________	7	7	7	7	[17/81-115]

C33. What balance was there between teacher-directed and student-directed instruction in language arts? (CIRCLE ONE NUMBER FOR A, B, AND C IN EACH COLUMN)

	1st Observation		2nd Observation		
	Whole Class	Part of Class	Whole Class	Part of Class	
a. Reading instruction					
Not applicable; no reading instruction	0	0	0	0	
Completely teacher-directed	1	1	1	1	
Mostly teacher-directed	2	2	2	2	
Equal balance	3	3	3	3	
Mostly student-directed	4	4	4	4	
Completely student-directed	5	5	5	5	[18/11-14]
b. Writing instruction					
Not applicable; no writing instruction	0	0	0	0	
Completely teacher-directed	1	1	1	1	
Mostly teacher-directed	2	2	2	2	
Equal balance	3	3	3	3	
Mostly student-directed	4	4	4	4	
Completely student-directed	5	5	5	5	[18/15-18]
c. Other language arts instruction					
Not applicable; no other language arts instruction	0	0	0	0	
Completely teacher-directed	1	1	1	1	
Mostly teacher-directed	2	2	2	2	
Equal balance	3	3	3	3	
Mostly student-directed	4	4	4	4	
Completely student-directed	5	5	5	5	[18/19-22]

[NOTE: Independent seatwork, group work without teacher, individual project work should be coded differently depending on the degree of discretion students exercise. To count as mostly or completely student-directed, tasks must allow for choice on the students' part of what to do and/or how to do it. Thus, individual seatwork completing a highly structured worksheet would typically count as "completely teacher-directed." A work period in which students choose between structured worksheets might count as "mostly teacher-directed." A writing assignment, on the other hand, allowing students to create their own story (not following a prescribed formula) would count as "mostly student-directed." Your response will, of course, "average" across all relevant reading segments, writing segments, etc.]

C34. What forms of student-student interaction were encouraged or permitted during language arts instruction? (CIRCLE ALL THAT APPLY IN EACH COLUMN)

a. Reading					
Not applicable; no reading	0	0	0	0	
No student-student interaction	1	1	1	1	
Discussion among students (e.g., about something they read)	2	2	2	2	
Peer help with reading (e.g., in partner reading)	3	3	3	3	
Joint seatwork (e.g., two or more complete a reading mechanics exercise)	4	4	4	4	
Other (SPECIFY) ______	5	5	5	5	[18/23-49]
b. Writing					
Not applicable; no writing	0	0	0	0	
No student-student interaction permitted	1	1	1	1	
Group work to prepare for writing	2	2	2	2	
Group writing	3	3	3	3	
Peer feedback on written work	4	4	4	4	
Conversation while doing individual writing assignments	5	5	5	5	
Discussion of students' written work	6	6	6	6	
Other (SPECIFY) ______	7	7	7	7	[18/50-84]
c. Other language arts					
Not applicable; no other language arts	0	0	0	0	
No student-student interaction permitted	1	1	1	1	
Group work on assignments	2	2	2	2	
Individual help to other students with assignments (e.g., seatwork)	3	3	3	3	
Interactive games	4	4	4	4	
Other (SPECIFY) ______	5	5	5	5	[18/85-111]

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	1st Observation		2nd Observation		
	Whole Class	Part of Class	Whole Class	Part of Class	
C35. How was language arts instruction adapted to needs of LEP students? (CIRCLE ALL THAT APPLY)					
Not applicable; no LEP students	0	0	0	0	
No adaptation to LEP students' needs	1	1	1	1	
Some or all teaching was done in LEP students' native language	2	2	2	2	
LEP students were allowed to write in their native language	3	3	3	3	
LEP students were given assignments that demanded less English language ability	4	4	4	4	
Instruction emphasized oral language development	5	5	5	5	
Other (SPECIFY) ______________________________ ______________________________	6	6	6	6	[19/11-41]
C36. How were students held accountable for carrying out work assigned in language arts? (CIRCLE ALL THAT APPLY)					
Students not held accountable	0	0	0	0	
Teacher called on children for oral recitation	1	1	1	1	
Teacher ensured all assigned work was completed	2	2	2	2	
Teacher checked each child's work during lesson	3	3	3	3	
Teacher collected whatever students had finished	4	4	4	4	
Students were tested or assessed	5	5	5	5	
Other (SPECIFY) ______________________________	6	6	6	6	[19/42-72]
C37. What feedback were students given on their performance in language arts instruction? (CIRCLE ALL THAT APPLY)					
No feedback	0	0	0	0	
Oral correction/praise by teacher in front of group or class	1	1	1	1	
Oral correction/praise by teacher in one-on-one situation	2	2	2	2	
Teacher correction or grading of written work (during or after class)	3	3	3	3	
Student feedback to their peers	4	4	4	4	
Points or other cumulative reward for job well done	5	5	5	5	
Other (SPECIFY) ______________________________	6	6	6	6	[19/73-103]
C38. In what ways did the teacher try to manage or control classroom behavior during language arts? (CIRCLE ALL THAT APPLY)					
Evidence of preventive management	01	01	01	01	
Periodic comments on appropriate behavior	02	02	02	02	
Nonverbal indications of approval (e.g., touching, pats on back)	03	03	03	03	
Individual incentives/rewards for appropriate behavior	04	04	04	04	
Group incentives/rewards for appropriate behavior	05	05	05	05	
Loud admonition of whole class for inappropriate behavior	06	06	06	06	
Vocal "singling out" of disruptive individuals	07	07	07	07	
Quiet admonition of whole class	08	08	08	08	
Nonobtrusive "talking to" disruptive individuals	09	09	09	09	
Repositioning individuals who are behaving inappropriately	10	10	10	10	
Other nonverbal responses to inappropriate behavior (SPECIFY) ______________________________	11	11	11	11	
Other management techniques (SPECIFY) ______________ ______________________________	12	12	12	12	[20/11-112]

[Note: Use "Evidence of preventive management" when routines are clearly established and teacher appears to have to do little overt "managing."]

D. Curriculum and Instruction in Language Arts Across the Two-Week Period, in Regular and Supplemental Rooms

THESE ITEMS APPLY TO BOTH THE REGULAR CLASSROOM AND TO THE ONE OR TWO SUPPLEMENTAL LANGUAGE ARTS PROGRAM ROOMS (SERVING FOUR OR MORE CHILDREN) NOTED IN ITEM A8.

	Regular Classroom				
	Whole Class	Part of Class	Supp. Room #1	Supp. Room #2	
Reading					

D1. Which reading mechanics skills received the most attention during this two-week period? (CIRCLE ALL THAT APPLY IN EACH COLUMN)

Explicit phonics (sounds taught in isolation from words)	1	1	1	1	
Implicit phonics -- As part of reading	2	2	2	2	
Out of context	3	3	3	3	
Whole word recognition -- As part of reading	4	4	4	4	
Out of context	5	5	5	5	
Word analysis -- As part of reading	6	6	6	6	
Out of context	7	7	7	7	
Fluency practice (e.g., oral reading for fluency)	8	8	8	8	
Other (PLEASE SPECIFY) ____________________	9	9	9	9	[21/11-49]

D2. How would you classify the primary approach to teaching reading mechanics during these two weeks? (CIRCLE ONE IN EACH APPLICABLE COLUMN)

Skills taught primarily out of context of reading text	1	1	1	1	
Skills taught both in and out of context	2	2	2	2	
Skill instruction primarily as part of text reading	3	3	3	3	[21/50-53]

D3. How would you classify the primary approach to reading comprehension instruction? (CIRCLE ONE NUMBER IN EACH APPLICABLE COLUMN)

Accuracy focus: instruction aimed at literal meaning of text	1	1	1	1	
Understanding focus: instruction aimed at more than literal meaning; interpreting text	2	2	2	2	
Combination of _accuracy_ and _understanding_ focus	3	3	3	3	[21/54-57]

D4. In what way(s) have reading comprehension strategies been taught (if at all) during this period? (CIRCLE ALL THAT APPLY IN EACH APPLICABLE COLUMN)

No explicit teaching of comprehension strategies	0	0	0	0	
Modeling the process of comprehending	1	1	1	1	
Teaching specific comprehension skills (e.g., prediction, summarization)	2	2	2	2	
Other (PLEASE SPECIFY) ____________________	3	3	3	3	[21/58-76]

D5. Across the two weeks, what kinds of text did children read? (CIRCLE ALL THAT APPLY IN EACH APPLICABLE COLUMN)

Not applicable; no text was read	0	0	0	0	
Informative text (reports, essays, descriptions, etc.)	1	1	1	1	
Narrative--basal stories developed to teach reading	2	2	2	2	
Narrative--stories for general audience (may be trade book or in basal anthology)	3	3	3	3	
Poems	4	4	4	4	
Drama	5	5	5	5	
Reading mechanics exercises (e.g., in workbook, on ditto)	6	6	6	6	
Student-generated or student-dictated text	7	7	7	7	
Other forms of text (SPECIFY) ____________________	8	8	8	8	[22/11-49]

	Regular Classroom				
	Whole Class	Part of Class	Supp. Room #1	Supp. Room #2	

D6. During this period, what emphasis was placed on the use of a published basal reading series? (CIRCLE ONE NUMBER IN EACH APPLICABLE COLUMN)

Exclusive reliance on basal series	1	1	1	1	
Primary emphasis on basal series, but with some other reading materials	2	2	2	2	
Primary emphasis on other reading material, but with some use of basal	3	3	3	3	
No use of basal series at all	4	4	4	4	[22/50-53]

[Note: "Basals" may include excerpted material that also appears in trade books.]

D7. How frequently during the two-week period did homework involve reading text (of any length or kind)? (CIRCLE ONE NUMBER IN EACH APPLICABLE COLUMN)

Not applicable; no homework	0	0	0	0	
Never	1	1	1	1	
Once or twice	2	2	2	2	
Frequently	3	3	3	3	
Almost daily	4	4	4	4	[22/54-57]

[NOTE: If homework assignments span more than one day, code for each day the children could be doing homework--e.g., reading a book for the whole two weeks, then code "almost daily."]

D8. In what ways (if at all) were children able to choose what they read? (CIRCLE ALL THAT APPLY)

Children had no choice at all	0	0	0	0	
Children had a library period where they chose reading material	1	1	1	1	
Children chose books (or passages) from choices provided by teacher in class	2	2	2	2	
Children chose any books or materials they wished to read in class	3	3	3	3	[22/58-73]

D9. What phrases below characterize the teacher's strategy for maximizing students' experience of reading across the two-week period? (CIRCLE ALL THAT APPLY)

No phrases apply	0	0	0	0	
High degree of teacher-directed activity	1	1	1	1	
A large amount of time spent reading orally or silently	2	2	2	2	
An emphasis on modeling correct reading (e.g., teacher reading aloud)	3	3	3	3	
Whole or small group choral reading	4	4	4	4	
Individual oral reading in small groups	5	5	5	5	
Activities that get students to read over the same passages repeatedly	6	6	6	6	
Other strategy (SPECIFY) ______________________	7	7	7	7	[22/74-108]

D10. What approach was taken to poor readers? (CIRCLE ALL THAT APPLY)

No special approach	00	00	00	00	
Left to supplemental programs	01	01	01	01	
Extra attention from teacher outside of class time	02	02	02	02	
Extra attention from teacher in class	03	03	03	03	
Attention from classroom aide	04	04	04	04	
Individual peer help	05	05	05	05	
Grouping with higher-achieving students	06	06	06	06	
Grouping with other low-achieving students	07	07	07	07	
"Singling out" during oral recitation or seatwork time	08	08	08	08	
Little attention during oral recitation	09	09	09	09	
Different curricula (e.g., simpler)	10	10	10	10	
Slower pace for instruction	11	11	11	11	
More repetition, opportunities for reinforcement	12	12	12	12	
Other (SPECIFY) ______________________	13	13	13	13	[23/11-125]

Writing

D11. Across the two weeks, how many tasks in language arts involved the following:

	Regular Classroom			
	Whole Class	Part of Class	Supp. Room #1	Supp. Room #2
Non-composed text (students writing text dictated by teacher, copying text, etc.)	____	____	____	____
Composed restricted text (e.g., question-and-answer writing, writing within tightly prescribed formats)	____	____	____	____
Composed extended text (open-ended writing assignments allowing students to develop text in their own way, including dictating text to teacher)	____	____	____	____ [24/11-34]

D12. Of all composed text writing during the two weeks, how many writing tasks were of each type? (ENTER NUMBER OF TASKS IN EACH APPLICABLE SPACE; IF "0", LEAVE BLANK)

	Whole Class	Part of Class	Supp. Room #1	Supp. Room #2
Not applicable - No writing of composed text (CIRCLE 99)	99	99	99	99
Composed extended text				
Informative/Essay	____	____	____	____
Informative/Report	____	____	____	____
Informative/Summary	____	____	____	____
Informative/Note taking	____	____	____	____
Imaginative/Story	____	____	____	____
Imaginative/Poem	____	____	____	____
Imaginative/Play	____	____	____	____
Personal/Journal	____	____	____	____
Personal/Letter, etc.	____	____	____	____
Other (SPECIFY) ________________	____	____	____	____
Composed restricted text (SPECIFY) ________________	____	____	____	____ [25/11-112]

D13. In teaching composed writing (if any during this period), has this teacher placed greater emphasis on correct mechanics or meaningful communication? (CIRCLE ONE NUMBER IN EACH COLUMN)

	Whole Class	Part of Class	Supp. Room #1	Supp. Room #2
Not applicable; no teaching of composed writing	0	0	0	0
Greater emphasis on correct mechanics	1	1	1	1
Roughly equal emphasis on mechanics and meaningful communication	2	2	2	2
Greater emphasis on meaningful communication	3	3	3	3 [25/113-116]

D14. In what ways did writing instruction ensure that students had sufficient knowledge of the topics they were writing about? (CIRCLE ALL THAT APPLY IN EACH APPLICABLE COLUMN)

	Whole Class	Part of Class	Supp. Room #1	Supp. Room #2
Not applicable; no special knowledge was necessary for any writing assignments	0	0	0	0
Teacher presented information on writing topic(s)	1	1	1	1
Class discussion of writing topics	2	2	2	2
Students read about topic as part of writing instruction	3	3	3	3
Students did other research on topic as part of writing instruction	4	4	4	4
Topics were chosen that related to work done in other subjects	5	5	5	5
Other (SPECIFY) ________________	6	6	6	6 [26/11-41]

	Regular Classroom				
	Whole Class	Part of Class	Supp. Room #1	Supp. Room #2	
D15. How much did the teacher structure the composed extended writing assignments children undertook? (CIRCLE ONE NUMBER IN EACH COLUMN UNDER EACH CATEGORY OF WRITING)					
a. Personal writing and freewriting					
Not applicable; no personal or freewriting done	0	0	0	0	
Highly structured (teacher provides much of text; students complete it)	1	1	1	1	
Some structure (e.g., teacher provides organization for text or a model to follow)	2	2	2	2	
Little or no structure (teacher makes a few suggestions, at most, about possible ways to organize writing)	3	3	3	3	[26/42-45]
b. Informative writing					
Not applicable; no informative writing was done	0	0	0	0	
Highly structured (teacher provides much of text; students complete it)	1	1	1	1	
Some structure (e.g., teacher provides organization for text or a model to follow)	2	2	2	2	
Little or no structure (teacher makes a few suggestions, at most, about possible ways to organize writing)	3	3	3	3	[26/46-49]
c. Imaginative writing					
Not applicable; no imaginative writing was done	0	0	0	0	
Highly structured (teacher provides much of text; students complete it)	1	1	1	1	
Some structure (e.g., teacher provides organization for text or a model to follow)	2	2	2	2	
Little or no structure (teacher makes a few suggestions, at most, about possible ways to organize writing)	3	3	3	3	[26/50-53]
D16. How frequently during the two weeks did homework involve writing composed text (extended or restricted)? (CIRCLE ONE NUMBER IN EACH COLUMN)					
Not applicable	0	0	0	0	
Never	1	1	1	1	
Once or twice	2	2	2	2	
Frequently	3	3	3	3	
Almost daily	4	4	4	4	[26/54-57]

[Note: If homework assignments span more than one day, code for each day the children could be doing homework--e.g., writing a paper for the whole two weeks, then code "almost daily."]

D17. What phrases below characterize the teacher's strategy for teaching writing across the two-week period?
(CIRCLE ALL THAT APPLY IN EACH COLUMN)

	Regular Classroom			
	Whole Class	Part of Class	Supp. Room #1	Supp. Room #2
Not applicable; no text writing	0	0	0	0
High degree of teacher presentation and explanation	1	1	1	1
Lots of time spent writing in class	2	2	2	2
An emphasis on modeling correct writing	3	3	3	3
Heavy use of non-composed writing: teacher dictation, copying, etc.	4	4	4	4
Group writing (including stories dictated by class)	5	5	5	5
Writing through individual student dictation to teacher	6	6	6	6
Other strategy (SPECIFY) ______________________________	7	7	7	7

[Note: Group or class-dictated stories may also be text for reading instruction, too.]

[26/58-92]

D18. What approach was taken to teaching the less proficient writers? (CIRCLE ALL THAT APPLY)

No special approach	00	00	00	00
Left to supplemental programs	01	01	01	01
Extra attention from teacher outside of class time	02	02	02	02
Individual attention from teacher during class	03	03	03	03
Attention from classroom aide	04	04	04	04
Individual peer help	05	05	05	05
Grouping with higher-achieving students	06	06	06	06
Grouping with other low-achieving students	07	07	07	07
"Singling out" during oral recitation, seatwork	08	08	08	08
Little attention during oral recitation	09	09	09	09
Different curricula (e.g., simpler)	10	10	10	10
Slowing down the pace	11	11	11	11
Extra repetition, opportunities for reinforcement	12	12	12	12
Other (SPECIFY) ______________________________	13	13	13	13

Other Language Arts

D19. Which language mechanics skills received the most attention during this two-week period?
(CIRCLE ALL THAT APPLY IN EACH COLUMN)

[27/11-125]

Not applicable; no language mechanics taught this week	00	00	00	00
Handwriting	01	01	01	01
Spelling	02	02	02	02
Punctuation; capitalization	03	03	03	03
Vocabulary -- As part of writing or reading	04	04	04	04
-- Out of context	05	05	05	05
Sentence structure -- As part of writing or reading	06	06	06	06
-- Out of context	07	07	07	07
Parts of speech -- As part of writing or reading	08	08	08	08
-- Out of context	09	09	09	09
Other (PLEASE SPECIFY) ______________________________	10	10	10	10

[28/11-101]

D20. How would you classify this teacher's approach to teaching language mechanics?
(CIRCLE ONE IN EACH APPLICABLE COLUMN)

Skills primarily taught out of context of writing text	1	1	1	1
Roughly equal mixture of skill teaching in and out of context	2	2	2	2
Skill instruction primarily done as part of text writing	3	3	3	3

[28/102-105]

D21. What phrases below characterize the teacher's strategy for teaching other language arts across the two-week period? (CIRCLE ALL THAT APPLY)

	Regular Classroom			
	Whole Class	Part of Class	Supp. Room #1	Supp. Room #2
Not applicable; no other language arts teaching	0	0	0	0
High degree of teacher presentation, explanation, demonstration	1	1	1	1
A reliance on worksheets and other individual seatwork	2	2	2	2
An emphasis on modeling correct mechanics	3	3	3	3
Extensive oral drill in whole class or small group formats	4	4	4	4
Use of games or other "fun" approaches to skill learning	5	5	5	5
Activities that ensure considerable reinforcement and repetition of skill practice	6	6	6	6
Other strategy (SPECIFY) ______________________	7	7	7	7 [29/11-45]

D22. If permanent homogeneous grouping by ability or achievement was used for any aspect of language arts teaching (including supplemental instruction) across the two-week period, which of the following statements apply? (CIRCLE ONE NUMBER)

0 Not applicable; no homogenous ability grouping

1 No differences across groups; similar content and teaching strategies

2 Similar content across groups, but different teaching strategies

3 Different content (e.g., two levels of basal), but similar strategies

4 Different content and teaching strategies across groups [29/46]

D23. If permanent homogeneous grouping by ability or achievement was used for reading (including supplemental reading instruction), which of the following phrases (if any) describe differences between the lowest group and other group(s)? (CIRCLE ALL THAT APPLY)

0 Not applicable; no homogeneous ability groups in reading

The lowest group...

1 Had less time with a teacher or aide overall

2 Did more out-of-context drill

3 Received more attention from teacher

4 Was taught primarily by an aide

5 Had more time with a teacher or aide overall

6 Did less reading (oral or silent)

7 Got less comprehension instruction

8 Other differences (SPECIFY) ______________________

[29/47-58]

E. Mathematics: Overview and Organization

E1. What kinds of instructional staff were involved in teaching mathematics to the students in this class during this two-week period? (CIRCLE ALL THAT APPLY)

a. Regular Classroom

1 Regular classroom teacher
2 A second regular teacher (e.g., under departmentalized or team arrangement)
3 In-class teacher aide
4 A second in-class aide
5 Parent volunteer [29/59-67]
6 Other in-class teacher (SPECIFY) ______

b. Supplemental Program Room #1 (AS SPECIFIED IN A9)

0 Not applicable
1 Specialist
2 Aide [29/68-74]
3 Other (SPECIFY) ______

c. Supplemental Program Room #2 (AS SPECIFIED IN A9)

0 Not applicable
1 Specialist
2 Aide [29/75-81]
3 Other (SPECIFY) ______

Organization of Mathematics Program

E2. Approximately how many minutes per day were allocated to mathematics instruction during this two-week period?

______ minutes per day [30/11-13]

[Consider full instructional days, not minimum days or those interrupted by assemblies, earthquakes, or other unusual events]

E3. How was instruction in mathematics organized during the two-week period? (PLEASE CIRCLE ALL THAT APPLY)

1 Whole class instruction--ungrouped
2 Whole class instruction--grouped
3 Stable small group instruction
4 Changeable or ad hoc small group instruction
5 Partially individualized instruction
6 Fully individualized instruction [30/14-23]
7 Other form of organization (SPECIFY) ______

[Note: See Item B7 for explanation of response categories)

E4. If students were grouped, what was the primary basis for grouping? (PLEASE CIRCLE ALL THAT APPLY)

1 Homogeneous grouping by achievement or ability level
2 Heterogeneous grouping to mix achievement or ability levels
3 Grouping by student interest or topic of study
4 Grouping by student ethnic characteristics
5 Grouping by students' behavior characteristics
6 Grouping by English language ability
[30/24-33]
7 Other basis for grouping (PLEASE SPECIFY) ______

E5. In what ways (if at all) did the teacher individually tailor curriculum or instruction in mathematics for some or all of the class: (CIRCLE ALL THAT APPLY)

0 Not applicable; no individual tailoring
1 Students worked on the same topics, skills, or materials, but at their own pace
2 Individual students were assigned to work on different skills, topics, or materials
3 Individual students were allowed to select their own skills, topics, or materials to work on

4 Other (PLEASE SPECIFY) ______ [30/34-41]

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E6. With what subjects (if any) was mathematics instruction integrated during the two-week period? (CIRCLE ALL THAT APPLY)

0 No integration
1 Science, health, environmental education
2 Language arts
3 Social studies (including geography, civics)

4 Other (SPECIFY) ________________ [30/42-50]

8 Insufficient data

Organization of Supplemental Mathematics Programs

E7. Was there any supplemental mathematics program instruction--in or out of the regular classroom--during the two-week period for any of the students in the class?

1 Yes
2 No [SKIP TO E10] [30/51]

E8. Indicate how many (a) participated in each kind of supplemental program--in or out of the regular classroom--and (b) missed part or all of the regular classroom instruction because of participation in supplemental programs.

	(a) Participated	(b) Missed	
Chapter 1 math program	_____	_____	
Special education program (that includes language arts)	_____	_____	
Other supplemental math program (SPECIFY) ________________	_____	_____	[30/52-66]

E9. Supplemental mathematics instruction in or outside the regular classroom took which form(s) primarily during this two-week period?
(CIRCLE ALL THAT APPLY)

	Chpt. 1	Special Education	Other	
Not applicable; did not serve this room	0	0	0	
In-class instruction (aides)	1	1	1	
In-class instruction (mathematics specialist)	2	2	2	
Pull-out from mathematics (children miss some, but not all, of regular class mathematics)	3	3	3	
Pull-out from other time period (children miss none of regular class mathematics)	4	4	4	
Replacement instruction (children miss all of regular class mathematics)	5	5	5	
Add-on instruction (offered at times outside the regular academic day or term, e.g., after-school, intersession or vacation)	6	6	6	
Other arrangement (SPECIFY) ________________	7	7	7	[33/11-37]

E10. Students in this classroom who receive supplemental mathematics instruction outside or inside the regular classroom participate (a) how many times per week (b) for how many minutes/session (on average)?

	(a) Sessions/week	(b) Minutes/Session	
Outside the regular classroom			
Room #1 (AS SPECIFIED IN A9)	_____ sessions	_____ minutes	
Room #2 (AS SPECIFIED IN A9)	_____ sessions	_____ minutes	
Inside the regular classroom	_____ sessions	_____ minutes	[33/38-49]

E11. Indicate the richness (combining amount and variety) of visually displayed mathematics material (including technology such as computers, if used for math) in the regular and supplemental program classroom(s) during this two-week period. (CIRCLE ONE NUMBER IN EACH COLUMN)

	Regular Classroom	Supp. Room #1	Supp. Room #2	
Not applicable	0	0	0	
Very rich: A majority of the wall and display space is covered with mathematically related material (graphs, posters, math puzzles, statistics, etc.)	1	1	1	
Moderately rich: Between a quarter and a half of the wall and display space is covered with mathematically related material	2	2	2	
Moderately poor: There are a few mathematically relevant materials on display, but less than a quarter of the wall and display space is devoted to these things	3	3	3	
Very poor: There is virtually no mathematically relevant material to be seen	4	4	4	[33/50-52]

E12. During this two-week period, how many computers were there...

a. ...In this room (either permanently or on a temporary basis?	_______	_______	_______
b. ...Used for math instruction in this room?	_______	_______	_______
c. ...Elsewhere in the building (e.g., in computer lab) and used for math instruction by these students?	_______	_______	_______

[33/53-70]

F. Observed Mathematics Instruction in the Regular Classroom

(IF NO OBSERVATION DUE TO NONINTENSIVE CLASSROOM, SKIP TO NEXT SECTION)

F1. On what dates did you observe mathematics instruction? (ENTER MONTH, DAY, AND YEAR)

First observation: ___/___/___

Second observation: ___/___/___ [33/71-82]

F2. How many children were present in the room during these observations?

First observation: ________ children

Second observation: ________ children [33/83-86]

Log Items

F3. On which topic(s) did each day's math instruction focus? (CIRCLE ALL THAT APPLY IN EACH COLUMN)

	1st Observation		2nd Observation		
	Whole Class	Part of Class	Whole Class	Part of Class	
Arithmetic (or algebra)	1	1	1	1	
Geometry	2	2	2	2	
Measurement	3	3	3	3	
Statistics/probability	4	4	4	4	
Graphs	5	5	5	5	
Other (PLEASE SPECIFY) ________________	6	6	6	6	[34/11-37]

F4. What did instruction on the topic(s) primarily emphasize? (CIRCLE ALL THAT APPLY IN EACH COLUMN)

Building skills in using procedures or symbols	1	1	1	1	
Developing understanding of mathematical concepts or ideas	2	2	2	2	
Routine applications of mathematical procedures	3	3	3	3	
Applying mathematical ideas or procedures to novel problems	4	4	4	4	[34/38-53]

F5. If main topic was arithmetic (or algebra), what operations and quantities were involved? (PLEASE ENTER UP TO THREE NUMBERS FROM THE GRID BELOW IN THE SPACES UNDER "WHOLE CLASS" OR "PART OF CLASS," AS APPROPRIATE)

Operation	Whole Nos.	Number or Algebra Sentences	Fractions		Mixed Nos.	Decimals	Ratio, Percent	1st Observation		2nd Observation		
			Like	Unlike				Whole Class	Part of Class	Whole Class	Part of Class	
• Numbers/numeration	A1	A2	A3	A4	A5	A6	A7	☐	☐	☐	☐	
• Add	B1	B2	B3	B4	B5	B6	B7					
• Subtract	C1	C2	C3	C4	C5	C6	C7					
• Multiply	D1	D2	D3	D4	D5	D6	D7	☐	☐	☐	☐	
• Divide	E1	E2	E3	E4	E5	E6	E7					
• Combination (+,-,x,/)	F1	F2	F3	F4	F5	F6	F7					
• Estimate	G1	G2	G3	G4	G5	G6	G7	☐	☐	☐	☐	[34/54-77]
• Identify equivalents	H1	H2	H3	H4	H5	H6	H7					
• Other	I1	I2	I3	I4	I5	I6	I7					

F6. What did the students primarily do as part of mathematics instruction? (CIRCLE ALL THAT APPLY IN EACH COLUMN)

	1st Observation		2nd Observation		
	Whole Class	Part of Class	Whole Class	Part of Class	
Listening to explanation or presentation by teacher	1	1	1	1	
Oral exercises or drill (e.g., to practice mental math)	2	2	2	2	
Group/class discussion of assignments, problems, new topics	3	3	3	3	
Individual practice (e.g., seatwork)	4	4	4	4	
Collaborative work on mathematical projects or problems	5	5	5	5	
Computer-based activities	6	6	6	6	
Taking tests or other assessments of mathematics achievements	7	7	7	7	
Other activities (PLEASE SPECIFY) ________________	8	8	8	8	[35/11-45]

____

F7. Was any mathematics homework assigned? (CIRCLE ONE NUMBER FOR EACH OBSERVATION)

	1st Observation		2nd Observation		
	Whole Class	Part of Class	Whole Class	Part of Class	
No homework	0	0	0	0	
Completion of today's classwork	1	1	1	1	
New assignments to be done outside of class	2	2	2	2	
Previous assignment(s) still pending	3	3	3	3	[35/46-49]

[Note: "New" does not necessarily mean material that is unfamiliar to the children. Treat "new assignments" as those that are "newly given" as homework, even if they involve reinforcement of past lessons.]

F8. What instructional materials (or technology) were used in mathematics instruction today? (CIRCLE ALL THAT APPLY)

Published textbook	1	1	1	1	
Published workbook	2	2	2	2	
Manipulatives (PLEASE SPECIFY) ______________________	3	3	3	3	
Calculators	4	4	4	4	
Others (PLEASE SPECIFY) ______________________	5	5	5	5	[35/50-75]

Other Items Concerning Observed Mathematics Instruction

F9. Excluding transitions (and other non-academic time before lessons begin), how many minutes were actually spent in teaching and learning mathematics? (PUT YOUR BEST ESTIMATE)

Time spent...	1st Observation	2nd Observation	
...In all aspects of math instruction	_____ _____ min.	_____ _____ min.	
...By students completing written seatwork	_____ _____ min.	_____ _____ min.	[35/76-99]

F10. In what ways did the teacher represent mathematical ideas or concepts in the instruction you observed? (CIRCLE ALL THAT APPLY)

No representations of ideas or concepts	0	0	0	0	
Mathematical symbols	1	1	1	1	
Three-dimensional objects (SPECIFY) ______________________	2	2	2	2	
Two-dimensional diagrams	3	3	3	3	
Graphs	4	4	4	4	
Tables, charts, or matrices	5	5	5	5	
Number lines	6	6	6	6	
Other (SPECIFY) ______________________	7	7	7	7	[36/11-48]

F11. In how many ways were key concepts or procedures represented? (CIRCLE ONE NUMBER IN EACH APPLICABLE COLUMN)

One	1	1	1	1	
Two	2	2	2	2	
Three or more	3	3	3	3	[36/49-52]

[NOTE: Count two of the same kind--e.g., stacks of Unifix cubes and bundles of soda straws to represent place value--as "two; two ways of adding."]

F12. Indicate the types of problems students encountered during these lessons. (CIRCLE ALL THAT APPLY)

Numerical computation problems	1	1	1	1	
Routine "story" problems	2	2	2	2	
Nonroutine "story" problems	3	3	3	3	
Logic problems, puzzles	4	4	4	4	
Practical problems that involve mathematics	5	5	5	5	
Other types of problems (SPECIFY) ______________________	6	6	6	6	[36/53-79]

F13. Were problem-solving strategies explicitly taught? (CIRCLE ONE NUMBER IN EACH APPLICABLE COLUMN)

No	1	1	1	1	
Yes, as a minor part of instruction	2	2	2	2	
Yes, as a major part of instruction	3	3	3	3	[36/80-83]

[Note: Do not include "computational algorithms--that is, fixed procedures for computing--as a "problem solving strategy."]

	1st Observation		2nd Observation		
	Whole Class	Part of Class	Whole Class	Part of Class	

F14. If manipulatives or technology were used, how were they used? (CIRCLE ALL THAT APPLY)

As a motivational device	1	1	1	1	
To keep students busy	2	2	2	2	
To represent mathematical ideas or concepts	3	3	3	3	
As a reward for completing other work	4	4	4	4	
As problem solving tools	5	5	5	5	
As instruments for measuring or estimating	6	6	6	6	
Other (SPECIFY) ______________________	7	7	7	7	[37/11-41]

F15. Did instruction emphasize getting the correct answers, understanding the process by which answers were arrived at, or both? (CIRCLE ONE NUMBER IN EACH APPLICABLE COLUMN)

Not applicable; instruction was not concerned with answers or process	0	0	0	0	
Getting the correct answers	1	1	1	1	
Understanding the process by which answers were arrived at	2	2	2	2	
Both correct answers and process	3	3	3	3	[37/42-45]

F16. On the whole, how did students respond to mathematics instruction? (CIRCLE ONE NUMBER IN EACH APPLICABLE COLUMN)

Consistently high engagement	1	1	1	1	
Moderately high engagement	2	2	2	2	
Intermittent engagement (sometimes high, sometimes low)	3	3	3	3	
Moderately low engagement	4	4	4	4	
Consistently low engagement	5	5	5	5	[37/46-49]

[NOTE: Combine the level of engagement with the proportion of the class engaged. "Consistently high" = Nearly all of the class engaged nearly all of the time; "Moderately" = a majority of the class engaged most of the time; "Intermittent" = mixed pattern, with most children engaged some of the time, but also unengaged for comparable periods of time; etc.]

F17. What kinds of off-task behavior by students occurred during the class? (CIRCLE ALL THAT APPLY)

No off-task behavior	0	0	0	0	
Occasional tuning-out	1	1	1	1	
Occasional disruptive behaviors	2	2	2	2	
Frequent tuning-out	3	3	3	3	
Frequent disruptive behavior	4	4	4	4	
Doing academic activities unrelated to mathematics	5	5	5	5	
Other (SPECIFY) ______________________	6	6	6	6	[38/11-41]

F18. What kinds of student-student interactions (related to the academic task) were encouraged or permitted? (CIRCLE ALL THAT APPLY)

No student-student interaction permitted	1	1	1	1	
Discussions of assigned mathematics activities	2	2	2	2	
Peer help or tutoring	3	3	3	3	
Group problem-solving	4	4	4	4	
Conversation while doing individual seatwork	5	5	5	5	
Other student-student interactions (SPECIFY) __________ ______________________	6	6	6	6	[38/42-68]

F19. What attempts, if any, were made to connect what was being learned to students' experiences or lives outside of class? (CIRCLE ALL THAT APPLY)

No attempts were made	0	0	0	0	
Teacher explanation with examples or analogies from activities familiar to students	1	1	1	1	
Assigning practical problems to solve that students might encounter elsewhere	2	2	2	2	
Class discussion of how students might apply what they had learned	3	3	3	3	
Other (SPECIFY) ______________________	4	4	4	4	[39/11-33]

F20. Which of the following characterizes the "teacher talk" during mathematics instruction? (CIRCLE ALL THAT APPLY)

	1st Observation		2nd Observation		
	Whole Class	Part of Class	Whole Class	Part of Class	
A great deal of procedural directions	1	1	1	1	
Wait-time following questions (e.g., 2 seconds or more)	2	2	2	2	
Open-ended questioning	3	3	3	3	
Closed-ended questioning	4	4	4	4	
Questioning directed to all children in the room	5	5	5	5	
Allowances for, and response to, student-initiated questions	6	6	6	6	
Lecture/presentation	7	7	7	7	
Other (SPECIFY) ______	8	8	8	8	[39/34-68]

F21. What balance was struck between teacher-directed and student-directed learning in the mathematics instruction you answered? (CIRCLE ONE NUMBER IN APPLICABLE COLUMNS)

Entirely teacher-directed	1	1	1	1	
Primarily teacher-directed	2	2	2	2	
Combination	3	3	3	3	
Primarily student-directed	4	4	4	4	
Entirely student-directed	5	5	5	5	[39/69-72]

[NOTE: Independent seatwork, group work without teacher, individual project work should be coded differently depending on the degree of discretion students exercise. To count as mostly or completely student-directed, tasks must allow for choice on the students' part of what to do and/or how to do it. Thus, individual seatwork completing a highly structured worksheet would typically count as "completely teacher-directed." A work period in which students choose between structured worksheets might count as "mostly teacher-directed." A math assignment, on the other hand, allowing students to create their own problems (not following a prescribed formula) would count as "mostly student-directed." Your response will, of course, "average" across all relevant instructional segments.]

F22. In what ways did the teacher try to manage or control classroom behavior during mathematics? (CIRCLE ALL THAT APPLY)

Evidence of preventive management	01	01	01	01	
Periodic comments on appropriate behavior	02	02	02	02	
Nonverbal indications of approval (e.g., touching, pats on back)	03	03	03	03	
Individual incentives/rewards for appropriate behavior	04	04	04	04	
Group incentives/rewards for appropriate behavior	05	05	05	05	
Loud admonition of whole class for inappropriate behavior	06	06	06	06	
Vocal "singling out" of disruptive individuals	07	07	07	07	
Quiet admonition of whole class	08	08	08	08	
Nonobtrusive "talking to" disruptive individuals	09	09	09	09	
Repositioning individuals who are behaving inappropriately	10	10	10	10	
Other nonverbal responses to inappropriate behavior (SPECIFY) ______	11	11	11	11	
Other management techniques (SPECIFY) ______ ______	12	12	12	12	[40/11-112]

[Note: Use "Evidence of preventive management" when routines are clearly established and teacher appears to have to do little overt "managing."]

F23. How did (or will) students get feedback on the work they did during observed instruction? (CIRCLE ALL THAT APPLY)

No feedback	0	0	0	0	
Oral correction/praise by teacher in front of group or class	1	1	1	1	
Oral correction/praise by teacher in one-on-one situation	2	2	2	2	
Teacher correction or grading of written work (during or after class)	3	3	3	3	
Student feedback to their peers	4	4	4	4	
Points or other cumulative reward for job well done	5	5	5	5	
Other (SPECIFY) ______	6	6	6	6	[41/11-41]

F24. How were students held responsible for carrying out work assigned in mathematics? (CIRCLE ALL THAT APPLY)

	1st Observation		2nd Observation		
	Whole Class	Part of Class	Whole Class	Part of Class	
Students not held accountable	0	0	0	0	
Teacher called on children for oral recitation	1	1	1	1	
Teacher ensures all assigned work was completed	2	2	2	2	
Teacher checked each child's work during lesson	3	3	3	3	
Teacher collected whatever students had finished	4	4	4	4	
Students were tested or assessed	5	5	5	5	
Other (SPECIFY) ______________________________	6	6	6	6	[41/42-72]

G. Curriculum and Instruction in Mathematics Across the Two-Week Period in the Regular Classroom and Supplemental Rooms

THESE ITEMS APPLY TO BOTH THE REGULAR CLASSROOM AND THE ONE OR TWO SUPPLEMENTAL LANGUAGE ARTS PROGRAM ROOMS NOTED IN ITEM A9, P. 4.

G1. The principal learning tasks in which students engaged can be described by the taxonomy of main topics below. Circle up to six numbers in the taxonomy that were the primary topics/emphasis of mathematics instruction in the regular classroom during this two-week period.

	Primary Emphasis of Instruction				
Topic	Skills	Concepts	Routine Applications	Novel Problems	
Arithmetic/algebra	01	02	03	04	
Geometry	11	12	13	14	
Measurement	21	22	23	24	
Statistics/data	31	32	33	34	
Graphs	41	42	43	44	
Other (SPECIFY) ______________________	51	52	53	54	[42/11-25]

G2. If arithmetic or algebra was a major topic, on what operations/quantities in the grid below did instruction in the regular classroom concentrate? Circle up to 6 numbers.

	Quantities to Be Operated Upon							
			Fractions					
Operation	Whole Nos.	Number or Algebra Sentences	Like	Unlike	Mixed Nos.	Deci-mals	Per-cents	
Numbers/numeration	A1	A2	A3	A4	A5	A6	A7	
Add	B1	B2	B3	B4	B5	B6	B7	
Subtract	C1	C2	C3	C4	C5	C6	C7	
Multiply	D1	D2	D3	D4	D5	D6	D7	
Divide	E1	E2	E3	E4	E5	E6	E7	
Combination	F1	F2	F3	F4	F5	F6	F7	
Estimate	G1	G2	G3	G4	G5	G6	G7	
Identify/equivalents	H1	H2	H3	H4	H5	H6	H7	
Other	I1	I2	I3	I4	I5	I6	I7	[42/26-37]
Not applicable; no arithmetic taught during the two-week period							00	

G3. Rank the following four learning goals in order of importance to the teacher during this two-week period. (ENTER RANK NUMBER WITH "1" = MOST IMPORTANT; FOR ANY GOALS THAT DON'T APPLY AT ALL, CODE "9")

	Regular Classroom				
	Whole Class	Part of Class	Supp. Room #1	Supp. Room #2	
Building skills and using procedures or symbols	____	____	____	____	
Developing understanding of mathematical concepts or ideas	____	____	____	____	
Routine applications of mathematical concepts or ideas	____	____	____	____	
Applying mathematical ideas or procedures to novel problems	____	____	____	____	[42/38-53]

G4. In what ways did mathematics instruction during this period get at conceptual understanding? (CIRCLE ALL THAT APPLY)

	Whole Class	Part of Class	Supp. Room #1	Supp. Room #2	
No real focus on conceptual understanding	0	0	0	0	
Class or group discussion of the meaning of math problem or concept	1	1	1	1	
Teacher presentation or lecture	2	2	2	2	
Use of multiple representations for concepts, procedures, etc.	3	3	3	3	
Manipulative models (that students use)	4	4	4	4	
Visual representations or demonstrations	5	5	5	5	
Teacher modeling the process of understanding a problem, concept, etc.	6	6	6	6	
Explicit teaching of problem-solving strategies	7	7	7	7	
Other (SPECIFY) ______________________________	8	8	8	8	[42/54-92]

G5. In what ways did mathematics instruction focus on applications of concepts or procedures to (a) nonroutine problems or (b) life situations of children? (CIRCLE ALL THAT APPLY)

	Whole Class	Part of Class	Supp. Room #1	Supp. Room #2	
No focus on applications to nonroutine problems or life situations	0	0	0	0	
a. Applications to nonroutine problems					
Students given new and unfamiliar problems to solve	1	1	1	1	
Group or class discussion of new and unfamiliar problems	2	2	2	2	
Homework assignments involving mathematical applications outside of class	3	3	3	3	
Games or simulations involving nonroutine problems	4	4	4	4	
Other (SPECIFY) ______________________________	5	5	5	5	[43/11-37]
b. Applications to life situations of children					
Students given tasks that involve life situations	1	1	1	1	
Group or class discussion of how math applies to life situations	2	2	2	2	
Homework assignments involving life applications	3	3	3	3	
Games or simulations involving "real-life" situations	4	4	4	4	
Other (SPECIFY) ______________________________	5	5	5	5	[43/38-60]

G6. How closely did mathematics instruction in this period follow the district- or school-adopted textbook (and associated workbook)? (CIRCLE ONE NUMBER IN EACH APPLICABLE COLUMN)

	Whole Class	Part of Class	Supp. Room #1	Supp. Room #2	
Exclusive reliance on textbook/workbook	1	1	1	1	
Heavy use of textbook/workbook	2	2	2	2	
Some use of textbook/workbook	3	3	3	3	
Little or no use of textbook/workbook	4	4	4	4	[43/61-64]

G7. During this period, which of the following (if any) did the textbook and other materials encourage or require students to do? (CIRCLE ALL THAT APPLY)

	Whole Class	Part of Class	Supp. Room #1	Supp. Room #2	
Not applicable; no attention to problem solving	0	0	0	0	
Solve novel problems	1	1	1	1	
Address problems with more than one correct answer	2	2	2	2	
Show the process or steps for arriving at a solution	3	3	3	3	
Learn or use explicitly stated problem-solving strategies	4	4	4	4	[43/65-84]

G8. What phrases characterize the teacher's strategy for teaching mathematics during this two-week period? (CIRCLE ALL THAT APPLY)

	Regular Classroom				
	Whole Class	Part of Class	Supp. Room #1	Supp. Room #2	
High degree of teacher explanation, presentation, or demonstration	1	1	1	1	
Time spent in class going over and correcting homework	2	2	2	2	
A lot of time spent on individual seatwork	3	3	3	3	
Active discussions with students about math	4	4	4	4	
Emphasis on games and other ways to make math "fun"	5	5	5	5	
Reliance on whole group instruction primarily	6	6	6	6	
Other strategy (SPECIFY) ______________________	7	7	7	7	[43/85-115]

G9. What approach(es) did the teacher take to low-achieving students? (CIRCLE ALL THAT APPLY)

	Whole Class	Part of Class	Supp. Room #1	Supp. Room #2	
No special approach	00	00	00	00	
Left to supplemental programs	01	01	01	01	
Extra attention from teacher outside of class time	02	02	02	02	
Individual attention from teacher in class	03	03	03	03	
Attention from classroom aide	04	04	04	04	
Individual peer help	05	05	05	05	
Grouping with higher-achieving students	06	06	06	06	
Grouping with other low-achieving students	07	07	07	07	
"Singling out" during oral recitation	08	08	08	08	
Little attention during oral recitation	09	09	09	09	
Different curricula (e.g., simpler)	10	10	10	10	
Slowing down the pace of instruction	11	11	11	11	
Extra repetition, opportunities for reinforcement	12	12	12	12	
Other (SPECIFY) ______________________	13	13	13	13	[44/11-125]

G10. Which of the following types of mathematical materials and equipment were used across the two-week period? (CIRCLE ALL THAT APPLY IN EACH APPLICABLE COLUMN)

	Whole Class	Part of Class	Supp. Room #1	Supp. Room #2	
Published textbook	1	1	1	1	
Published workbook (and associated published materials)	2	2	2	2	
Teacher-made materials (SPECIFY) ______________________	3	3	3	3	
Class library of trade books on math or science	4	4	4	4	
Children's periodicals with math in them (e.g., 3-2-1 Contact)	5	5	5	5	
Calculators	6	6	6	6	
Computer(s) with math software (SPECIFY PROGRAM) ______________________	7	7	7	7	
Manipulatives (SPECIFY) ______________________	8	8	8	8	
Other (SPECIFY) ______________________	9	9	9	9	[45/11-58]

H. Teacher Background Variables

[NOTE: 1. THESE DATA DO NOT PERTAIN TO A PARTICULAR TWO-WEEK PERIOD. WE NEED TO OBTAIN THIS INFORMATION BY THE END OF THE YEAR.
2. BECAUSE THE CONFIGURATION OF STAFF MAY CHANGE FOR DIFFERENT SUBJECT AREAS, PLEASE CODE FOR EACH SUBJECT AREA, EVEN IF THAT MEANS DUPLICATING INFORMATION FOR ONE OR MORE INDIVIDUALS.]

Instructional Staff in the Regular Classroom

H1. Characterize the background of the instructional staff in the regular classroom for each subject area. (CIRCLE ALL THAT APPLY IN EACH COLUMN)

	Language Arts			Mathematics		
	Teacher	Aide, Other	Aide, Other	Teacher	Aide, Other	Aide, Other
Training in literature, writing, math, etc. (major or minor in college or graduate program)	1	1	1	1	1	1
Training in math or language arts teaching methods as part of education degree/certification program	2	2	2	2	2	2
Relevant school district-based professional development in the last 3 years	3	3	3	3	3	3
Relevant school district-based professional development in earlier years	4	4	4	4	4	4
Other relevant professional development (SPECIFY) ______	5	5	5	5	5	5
Ongoing intellectual engagement (e.g., through professional reading, leisure-time activities)	6	6	6	6	6	6
Insufficient data	8	8	8	8	8	8

[46/11-55]

[NOTE: If there is more than one classroom teacher, use "Aide/other" column(s); in-class supplemental program staff go here.]

H2. Do instructional staff in each subject area in the regular classroom speak the students' native language(s) (or dialect), if other than standard English? (CIRCLE ONE NUMBER IN EACH APPLICABLE COLUMN)

	Language Arts			Mathematics		
	Teacher	Aide, Other	Aide, Other	Teacher	Aide, Other	Aide, Other
Not applicable; no LEP students	0	0	0	0	0	0
No	1	1	1	1	1	1
Yes, for some LEP students or dialect speakers	2	2	2	2	2	2
Yes, for all LEP students or dialect speakers	3	3	3	3	3	3

[46/56-61]

H3. What is the racial/ethnic background of the regular classroom instructional staff in each subject area? (CIRCLE ONE NUMBER IN EACH COLUMN)

	Language Arts			Mathematics		
	Teacher	Aide, Other	Aide, Other	Teacher	Aide, Other	Aide, Other
Black (non-Hispanic)	1	1	1	1	1	1
Hispanic	2	2	2	2	2	2
Caucasian (non-Hispanic)	3	3	3	3	3	3
Asian/Pacific Islander	4	4	4	4	4	4
Native American	5	5	5	5	5	5
Other	6	6	6	6	6	6

[46/62-67]

H4. Other than by language or racial/ethnic background, in what ways are instructional staff in the regular classroom familiar with their students' backgrounds? (CIRCLE ALL THAT APPLY IN EACH COLUMN)

	Language Arts			Mathematics		
	Teacher	Aide, Other	Aide, Other	Teacher	Aide, Other	Aide, Other
Teacher has little familiarity with their students' backgrounds	0	0	0	0	0	0
Has 5 years or more experience teaching these kinds of students	1	1	1	1	1	1
Grew up in the same kind of community	2	2	2	2	2	2
Has contact with parents (e.g., by phone, notes, parent conferences)	3	3	3	3	3	3
Has visited some or all of students' homes	4	4	4	4	4	4
Lives in the neighborhood from which most children in the classroom come	5	5	5	5	5	5
Has taught siblings of children in class	6	6	6	6	6	6
Does community work in the neighborhood where children live	7	7	7	7	7	7
Other basis for familiarity with children's backgrounds (SPECIFY) ______________________	8	8	8	8	8	8

[47/11-67]

H5. How many years have regular classroom instructional staff taught (a) in schools serving this kind of student population, (b) schools serving other "disadvantaged" populations, and (c) this grade level of children? (ENTER THE NUMBER OF YEARS IN EACH APPLICABLE SPACE)

	Language Arts				Mathematics			
	Teacher	Aide, Other	Aide, Other		Teacher	Aide, Other	Aide, Other	
In schools serving this student population	____	____	____	years	____	____	____	years
In schools serving other "disadvantaged" populations	____	____	____	years	____	____	____	years
At this grade level	____	____	____	years	____	____	____	years

[48/11-46]

[NOTE: Define "this student population" by comparable levels of poverty, ethnic/racial background, and urbanicity.]

H6. How would you classify the expectations of the regular classroom teacher(s) for the academic success (success = mastery of this year's curriculum) of lower-achieving students? (CIRCLE ONE NUMBER IN EACH COLUMN)

Teacher believes...	Language Arts Teacher	Mathematics Teacher
All can succeed this year--performance at grade level	1	1
All can succeed, given differentiated curricula (e.g., with lower achievers succeeding at below grade-level goals)	2	2
All can succeed eventually (but some must be held back)	3	3
Some students are unlikely to succeed ever	4	4
Most won't be able to succeed	5	5
Insufficient data	8	8

[48/47-48]

H7. When students fail academically, what responsibility does the regular classroom teacher(s) take to help or make sure these students succeed in each subject area? (CIRCLE ONE NUMBER IN EACH COLUMN)

	Language Arts Teacher	Mathematics Teacher
Full responsibility	1	1
Shared responsibility (e.g., with aide or supplemental program staff)	2	2
Little or no responsibility (e.g., ignores children or leaves children to be taught primarily or solely by supplemental program)	3	3
Insufficient data	8	8

[48/49-50]

H8. Overall, how satisfied is the regular classroom teacher with his/her current teaching situation? (CIRCLE ONE NUMBER FOR A, B, C, AND D IN EACH COLUMN)

Satisfaction with...	... in Language Arts	... in Mathematics	
a. Their teaching performance			
Very satisfied	1	1	
Moderately satisfied	2	2	
Somewhat unsatisfied	3	3	
Very unsatisfied	4	4	
Insufficient data	8	8	[48/51-52]
b. Support for teaching by school administrators, resource staff, etc.			
Very satisfied	1	1	
Moderately satisfied	2	2	
Somewhat unsatisfied	3	3	
Very unsatisfied	4	4	
Insufficient data	8	8	[48/53-54]
c. Support for teaching by district program staff, etc.			
Very satisfied	1	1	
Moderately satisfied	2	2	
Somewhat unsatisfied	3	3	
Very unsatisfied	4	4	
Insufficient data	8	8	[48/55-56]
d. Teaching as a career			
Very satisfied	1	1	
Moderately satisfied	2	2	
Somewhat unsatisfied	3	3	
Very unsatisfied	4	4	
Insufficient data	8	8	[48/57-58]

H9. How much discretion does the teacher have to determine what is taught in this classroom, and how, in each subject area? (CIRCLE ONE NUMBER FOR A AND B IN EACH COLUMN)

	... in Language Arts	... in Mathematics	
a. What is taught			
Complete discretion	1	1	
Moderate discretion	2	2	
Some discretion	3	3	
Little or no discretion	4	4	
Insufficient data	8	8	[48/59-60]
b. How it is taught			
Complete discretion	1	1	
Moderate discretion	2	2	
Some discretion	3	3	
Little or no discretion	4	4	
Insufficient data	8	8	[48/61-62]

H10. What limits the teacher's discretion in each subject area? (CIRCLE ALL THAT APPLY IN EACH COLUMN)

	... in Language Arts	... in Mathematics	
State framework or guidelines	1	1	
District textbook adoptions	2	2	
District syllabi, scope-and-sequence	3	3	
State or district tests	4	4	
School-level curricular decisions	5	5	
Other limiting factors (SPECIFY) ________________	6	6	[48/63-77]

[NOTE: Your response should indicate major influences on teacher's decisionmaking that the teacher recognizes as a constraint and that you judge to have altered or affected choices about what to teach and how to teach.]

Supplemental Instructional Staff Outside the Regular Classroom (If any, serving four or more students from the regular classroom)

RESPOND ONLY FOR THOSE SUPPLEMENTAL PROGRAM ROOMS INDICATED IN ITEMS A8 AND A9.

H11. Characterize the background of the supplemental instructional staff who teach outside the regular classroom for each subject area. (CIRCLE ALL THAT APPLY IN EACH COLUMN)

	Language Arts		Mathematics		
	Supp. Room #1	Supp. Room #2	Supp. Room #1	Supp. Room #2	
Training in literature, writing, math, etc. (major or minor in college or graduate program)	1	1	1	1	
Training in math or language arts teaching methods as part of education degree/certification program	2	2	2	2	
Relevant school district-based professional development in the last 3 years	3	3	3	3	
Relevant school district-based professional development in earlier years	4	4	4	4	
Other relevant professional development (SPECIFY) ______________________________	5	5	5	5	
Ongoing intellectual engagement (e.g., through professional reading, leisure-time activities)	6	6	6	6	
Insufficient data	8	8	8	8	[49/11-41]

H12. Do supplemental instructional staff in each subject area who teach outside the regular classroom speak the students' native language(s) (or dialect), if other than standard English? (CIRCLE ONE NUMBER IN EACH COLUMN)

	Language Arts		Mathematics		
	Supp. Room #1	Supp. Room #2	Supp. Room #1	Supp. Room #2	
Not applicable; no LEP students	0	0	0	0	
No	1	1	1	1	
Yes, for some LEP students or dialect speakers	2	2	2	2	
Yes, for all LEP students or dialect speakers	3	3	3	3	[49/42-45]

H13. What is the racial/ethnic background of the supplemental instructional staff in each subject area who teach outside the regular classroom? (CIRCLE ONE NUMBER IN EACH COLUMN)

	Language Arts		Mathematics		
	Supp. Room #1	Supp. Room #2	Supp. Room #1	Supp. Room #2	
Black (non-Hispanic)	1	1	1	1	
Hispanic	2	2	2	2	
Caucasian (non-Hispanic)	3	3	3	3	
Asian/Pacific Islander	4	4	4	4	
Native American	5	5	5	5	
Other	6	6	6	6	[49/46-49]

H14. Other than by language or racial/ethnic background, in what ways are supplemental instructional staff outside the regular classroom familiar with their students' backgrounds? (CIRCLE ALL THAT APPLY IN EACH COLUMN)

	Language Arts		Mathematics	
	Supp. Room #1	Supp. Room #2	Supp. Room #1	Supp. Room #2
Teacher has little familiarity with their students' backgrounds	0	0	0	0
Has 5 years or more experience teaching these kinds of students	1	1	1	1
Grew up in the same kind of community	2	2	2	2
Has contact with parents (e.g., by phone, notes, parent conferences)	3	3	3	3
Has visited some or all of students' homes	4	4	4	4
Lives in the neighborhood from which most children in the classroom come	5	5	5	5
Has taught siblings of children in class	6	6	6	6
Does community work in the neighborhood where children live	7	7	7	7
Other basis for familiarity with children's backgrounds (SPECIFY) ______________________	8	8	8	8

[49/50-88]

H15. How many years have supplemental instructional staff outside the regular classroom taught (a) in schools serving this kind of student population, (b) schools serving other "disadvantaged" populations, and (c) this grade level of children? (ENTER THE NUMBER OF YEARS IN EACH APPLICABLE SPACE)

	Language Arts		Mathematics	
	Supp. Room #1	Supp. Room #2	Supp. Room #1	Supp. Room #2
In schools serving this student population	_____	_____ years	_____	_____ years
In schools serving other "disadvantaged" populations	_____	_____ years	_____	_____ years
At this grade level	_____	_____ years	_____	_____ years

[NOTE: Define "this student population" by comparable levels of poverty, ethnic/racial background, and urbanicity.]

[50/11-34]

H16. Overall, how satisfied are supplemental instructional staff outside the regular classroom with their current teaching situations? (CIRCLE ONE NUMBER FOR A, B, C, AND D IN EACH COLUMN)

	... in Language Arts		... in Mathematics		
	Supp. Room #1	Supp. Room #2	Supp. Room #1	Supp. Room #2	
Satisfaction with...					
a. Their teaching performance					
Very satisfied	1	1	1	1	
Moderately satisfied	2	2	2	2	
Somewhat unsatisfied	3	3	3	3	
Very unsatisfied	4	4	4	4	
Insufficient data	8	8	8	8	[50/35-38]
b. Support for teaching by school administrators, resource staff, etc.					
Very satisfied	1	1	1	1	
Moderately satisfied	2	2	2	2	
Somewhat unsatisfied	3	3	3	3	
Very unsatisfied	4	4	4	4	
Insufficient data	8	8	8	8	[50/39-42]
c. Support for teaching by district program staff, etc.					
Very satisfied	1	1	1	1	
Moderately satisfied	2	2	2	2	
Somewhat unsatisfied	3	3	3	3	
Very unsatisfied	4	4	4	4	
Insufficient data	8	8	8	8	[50/43-46]
d. Teaching as a career					
Very satisfied	1	1	1	1	
Moderately satisfied	2	2	2	2	
Somewhat unsatisfied	3	3	3	3	
Very unsatisfied	4	4	4	4	
Insufficient data	8	8	8	8	[50/47-50]

H17. How much discretion do supplemental instructional staff have to determine what is taught outside the regular classroom, and how, in each subject area? (CIRCLE ONE NUMBER FOR A AND B IN EACH COLUMN)

	... in Language Arts		... in Mathematics		
	Supp. Room #1	Supp. Room #2	Supp. Room #1	Supp. Room #2	
a. What is taught					
Complete discretion	1	1	1	1	
Moderate discretion	2	2	2	2	
Some discretion	3	3	3	3	
Little or no discretion	4	4	4	4	
Insufficient data	8	8	8	8	[50/51-54]
b. How it is taught					
Complete discretion	1	1	1	1	
Moderate discretion	2	2	2	2	
Some discretion	3	3	3	3	
Little or no discretion	4	4	4	4	
Insufficient data	8	8	8	8	[50/55-58]

H18. What limits the discretion of supplemental instructional staff outside the regular classroom in each subject area? (CIRCLE ALL THAT APPLY IN EACH COLUMN)

	... in Language Arts		... in Mathematics		
	Supp. Room #1	Supp. Room #2	Supp. Room #1	Supp. Room #2	
State framework or guidelines	1	1	1	1	
District textbook adoptions	2	2	2	2	
District syllabi, scope-and-sequence	3	3	3	3	
State or district tests	4	4	4	4	
School-level curricular decisions	5	5	5	5	
Curricular decisions by regular classroom teacher	6	6	6	6	
Supplemental program guidelines	7	7	7	7	
Other limiting factors (SPECIFY) ______________________	8	8	8	8	[50/59-89]

[NOTE: Your response should indicate major influences on teacher's decisionmaking that the teacher recognizes as a constraint and that you judge to have altered or affected choices about what to teach and how to teach.]

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